HITACHI
SERVICE MANUAL

TY	No. 633 EF

MS-W600ER
[ER,ER(BS)]

TN-521ZSW-182

545/384

On this model, a connecting terminal "CD CONTROL JACK" for combining CD player DA-W560 is added to the already marketed portable component system MS-W600. For details other than described here, refer to the service manual TY No. 607EF for MS-W600.
The destination indication of E, E(BS) is changed to ER, ER(BS).

Sur ce modèle, une borne de connexion "CD CONTROL JACK" (prise de commande de disque compact " pour combiner le tourne-disque compact DA-W560 est ajoutée au système de composants portable MS-W600 qui est déjà mis sur le marché.
Pour plus de détails autres que décrits ici, se reporter au manuel d'entretien TY No. 607 EF pour MS-W600.
L'indication de destination E, E(BS) est changée en ER, ER(BS).

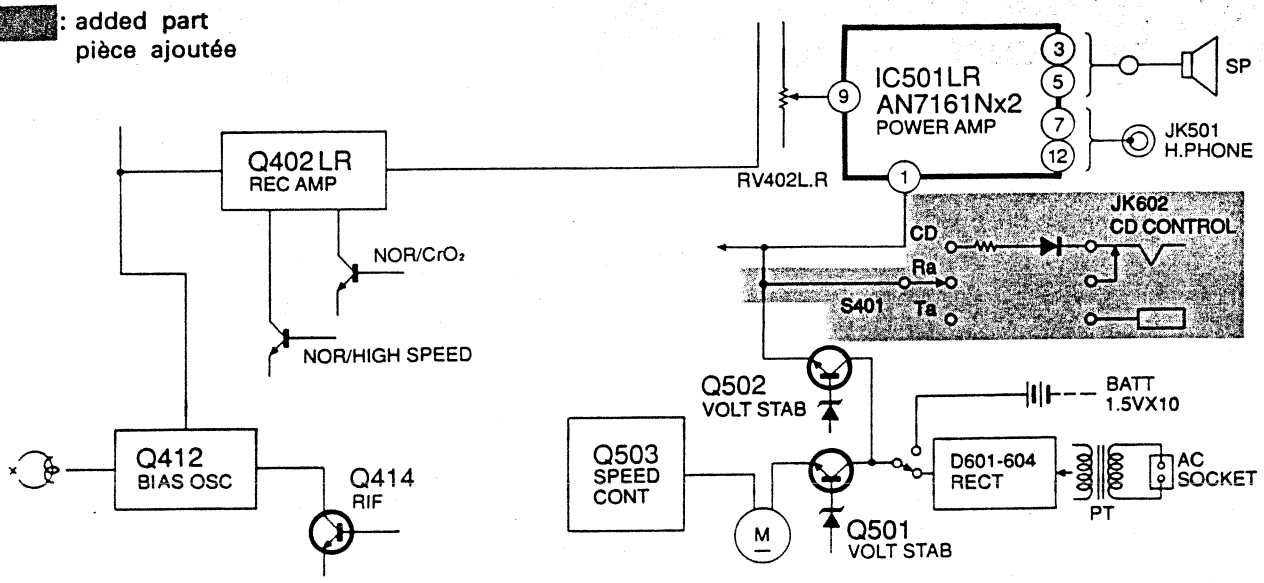
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

PORTABLE COMPONENT SYSTEM

September 1989 YOKOHAMA WORKS

BLOCK DIAGRAM • DIAGRAMME SYNOPTIQUE

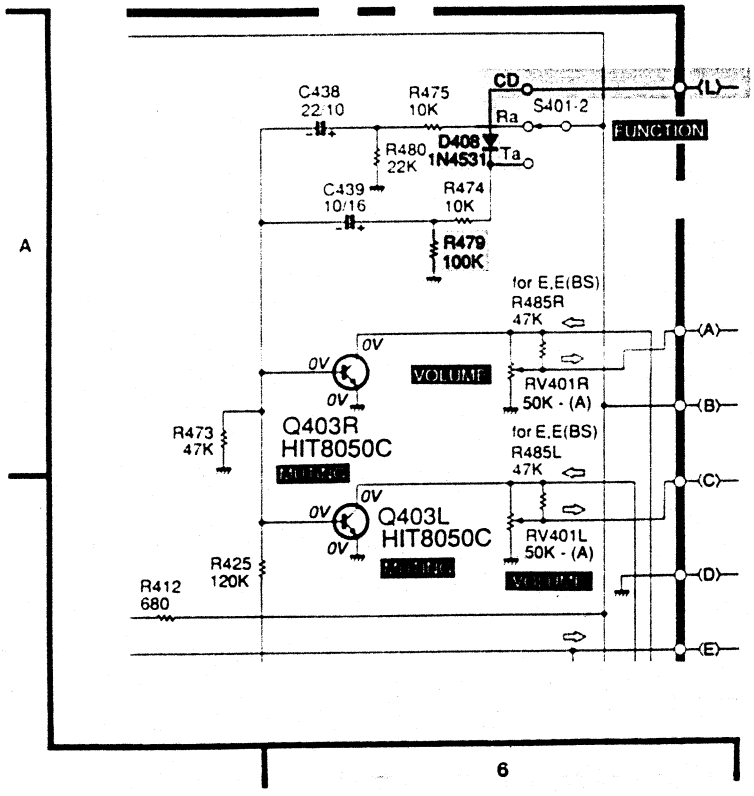
: added part
pièce ajoutée

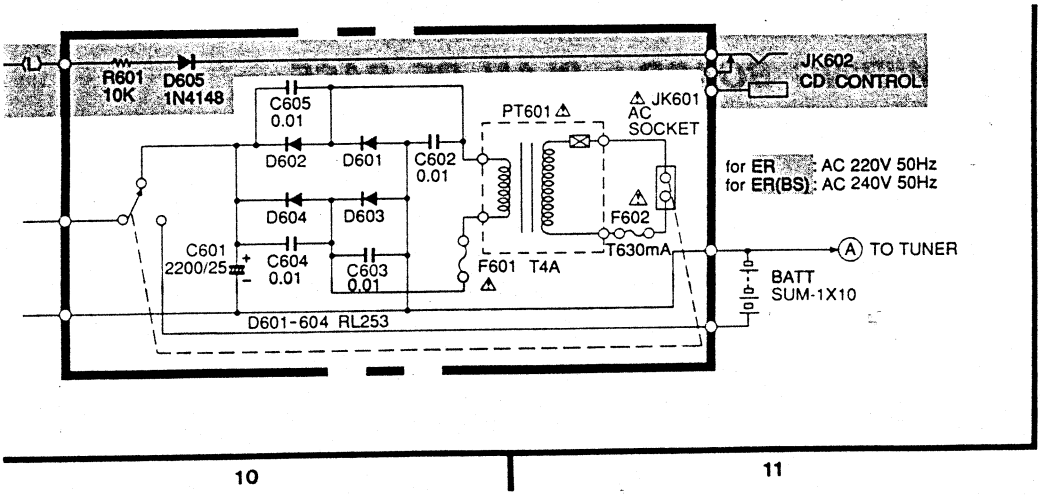


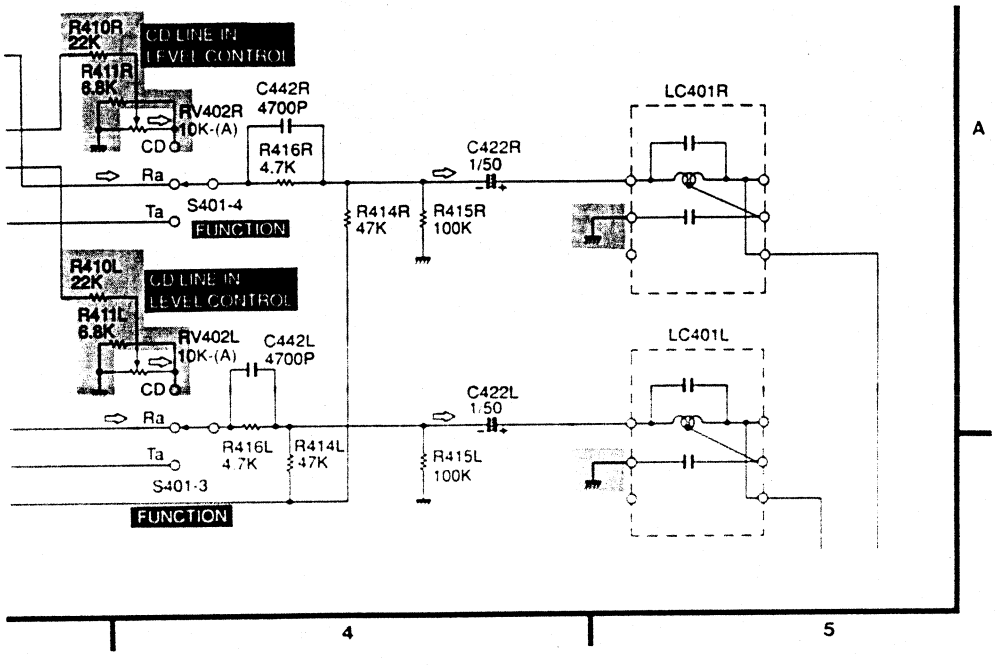
CIRCUIT DIAGRAM • DIAGRAMME DES CIRCUITS

AUDIO SECTION

: added part
pièce ajoutée

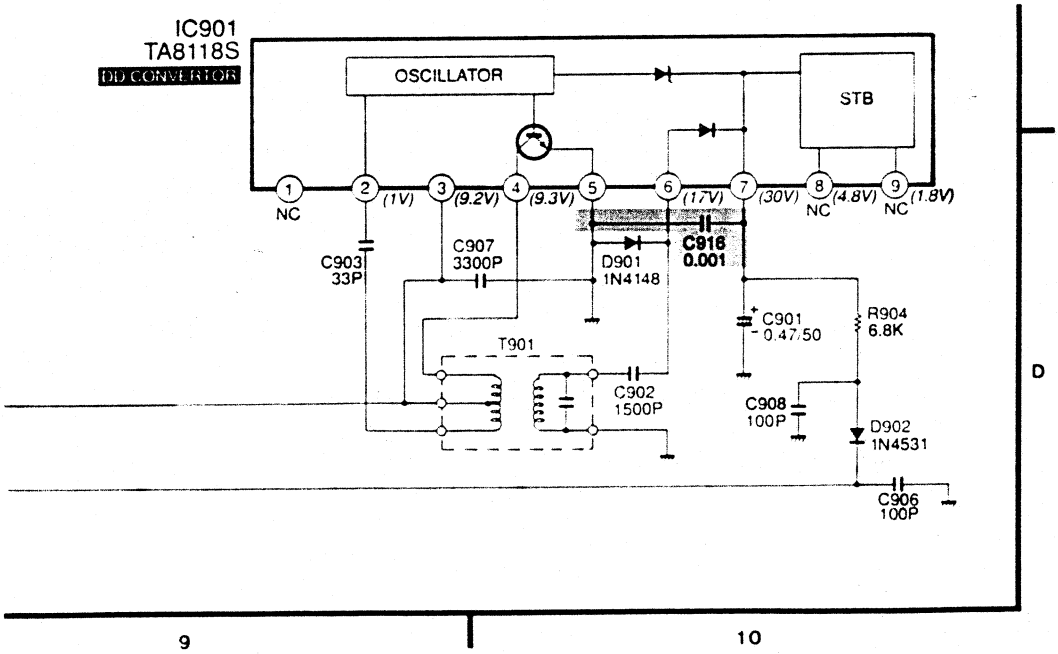






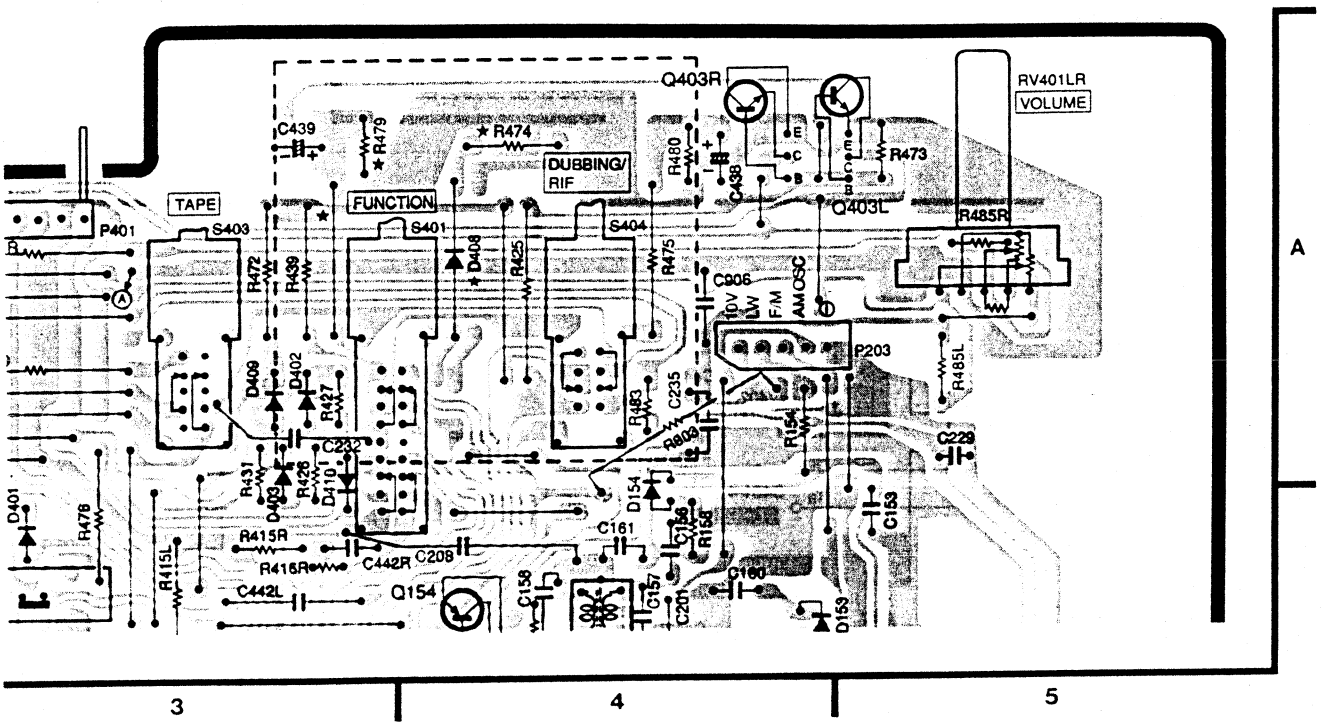
TUNER SECTION

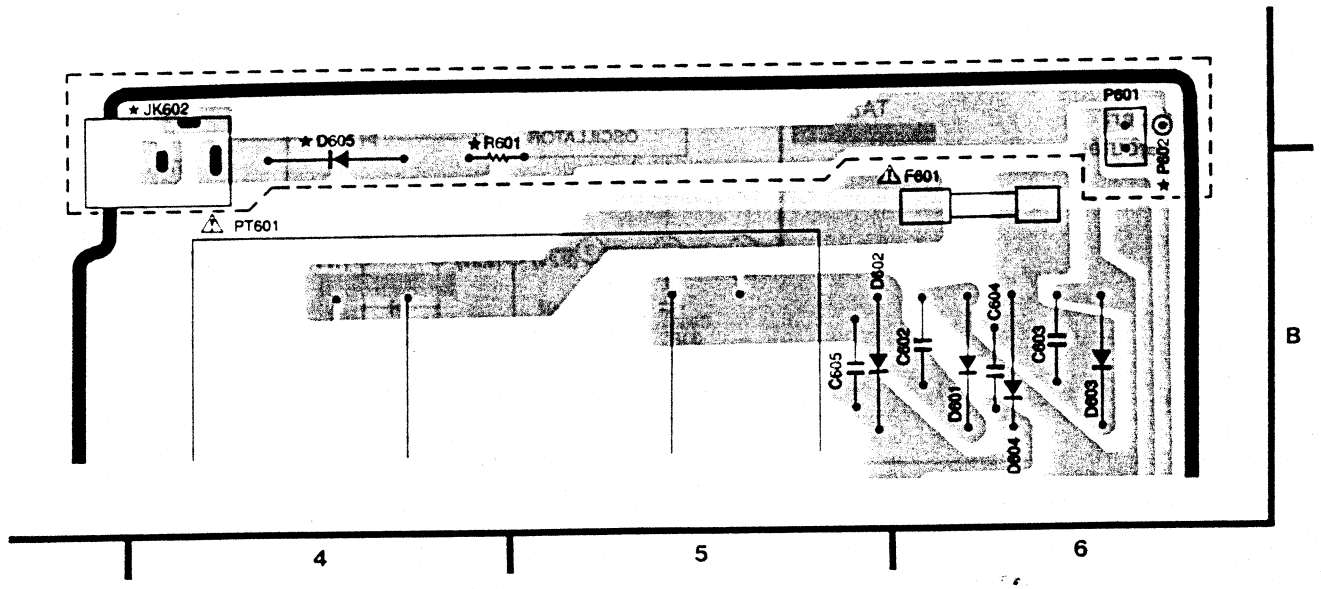
: added part
pièce ajoutée



PRINTED WIRING BOARD • PLAN DE BASE

★ : added part
pièce ajoutée
: new pattern
nouveau réseau

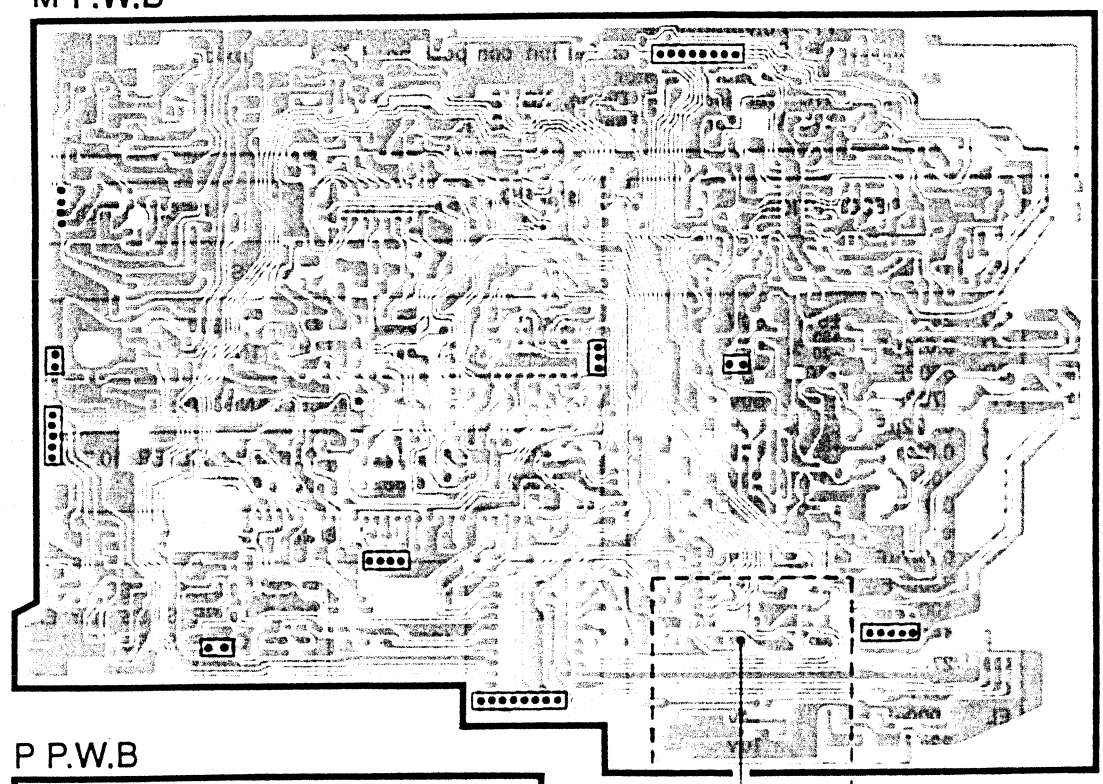




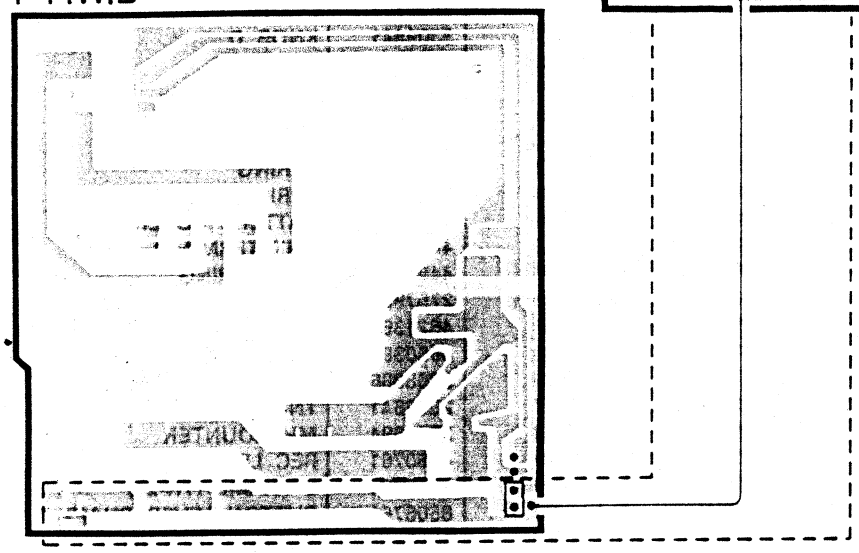
WIRING DIAGRAM • SCHEMA DE CABLAGE

: new pattern and added wire
nouveau réseau et fil ajouté

M P.W.B



P P.W.B



REPLACEMENT PARTS LIST • TABLEAU DES PIÈCES

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS:
Capacitors ..... CC: Cylindrical ceramic, CD: Ceramic disk, PF: Polyester film, EL: Electrolytic, PP: Polypropylene,
Resistors ..... CF: Carbon film, CC: Carbon composition, MF: Metal oxide film, VR: Variable resistor
Semiconductor ..... TR: Transistor, DI: Diode, ZD: Zener diode
VA: Varistor, TH: Thermistor, IC: IC

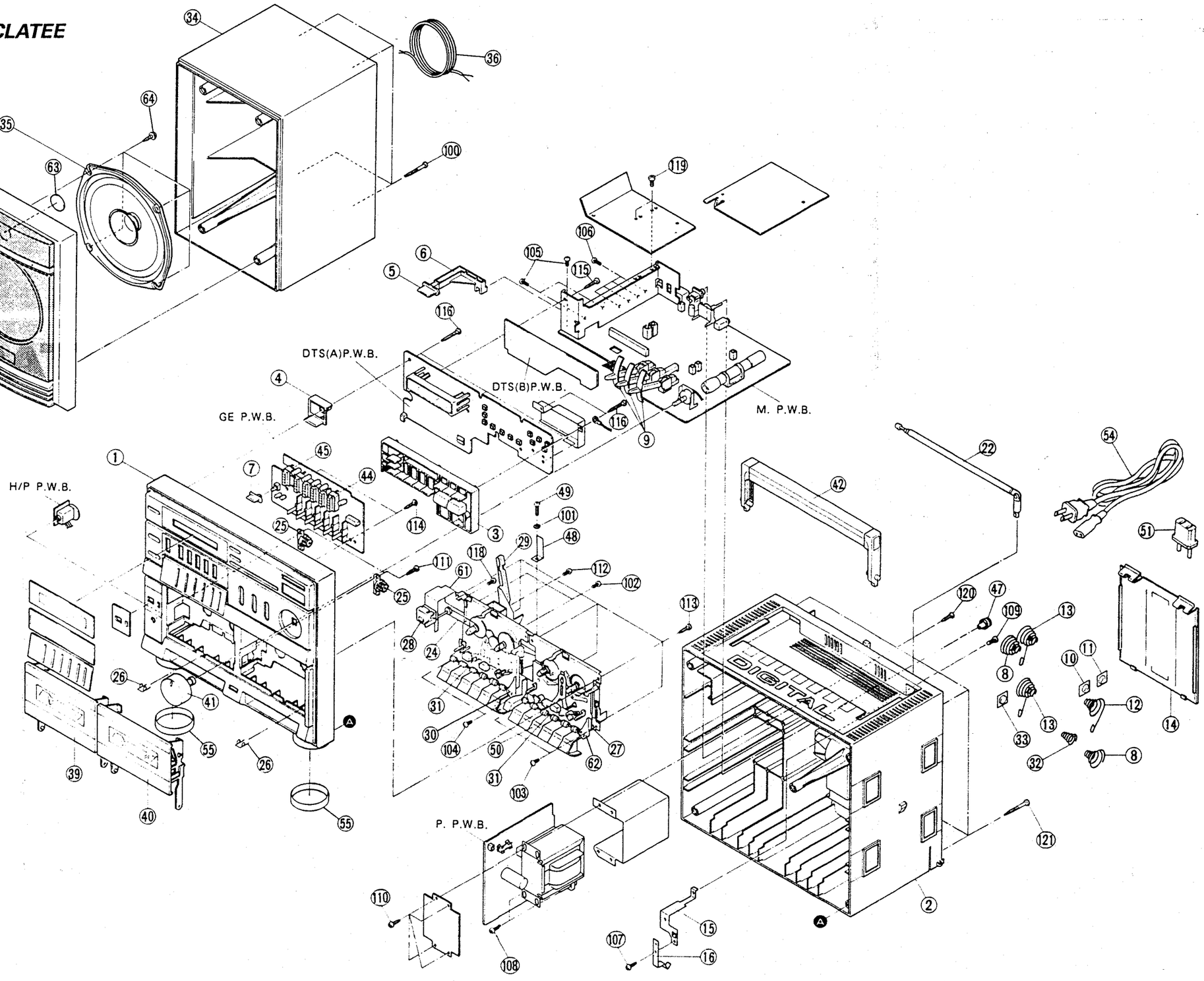
SYMBOL NO.	PARTS NO.	DESCRIPTION
		CAPACITORS;
C104	0246449	CD 24PF ±5% 50V
C108	0244173	CD 0.022µF $^{+80}_{-20}$ % 50V
C154	0249724	CD 560PF ±10% 50V
C156	0221321	PP 270PF ±5% 50V
C224	0244173	CD 0.022µF $^{+80}_{-20}$ % 50V
C225	0244173	CD 0.022µF $^{+80}_{-20}$ % 50V
C232	0890022	CC 100PF ±10% 50V
C405L,R	0240212	CD 0.01µF ±10% 25V
C409L,R		Jumper
C417L	0249765	CD 0.047µF ±20% 25V
C420L,R	0890038	CC 3300PF ±20% 16V
C514	0800051	EL 100µF 25V
C713	0890011	CC 15PF ±5% 50V
C714	0246450	CD 27PF ±5% 50V
C715	0246450	CD 27PF ±5% 50V
C717	0800081	EL 1000µF 10V
C727	0800022	EL 22µF 10V
C832R	0240067	CC 0.047µF $^{+80}_{-20}$ % 50V
C916	0244101	CD 0.001µF ±10% 50V
		RESISTORS;
R229	0700068	CF 120KΩ ±5% 1/16W
R402L,R	0113590	CF 91Ω ±5% 1/16W
R410L,R	0700058	CF 22KΩ ±5% 1/16W
R411L,R	0700052	CF 6.8KΩ ±5% 1/16W
R416R	0137859	CF 4.7KΩ ±5% 1/16W
R420	0129437	CF 10KΩ ±5% 1/8W
R431	0700049	CF 4.7KΩ ±5% 1/16W
R442	0700005	CF 2.2Ω ±5% 1/16W
R454L,R	0700046	CF 2.7KΩ ±5% 1/16W
R468	0700027	CF 100Ω ±5% 1/16W
R479	0700067	CF 100K ±5% 1/16W
R501R	0700042	CF 1.2KΩ ±5% 1/16W
R513	0700052	CF 6.8KΩ ±5% 1/16W
R601	0700054	CF 10KΩ ±5% 1/16W
R738	0700032	CF 220Ω ±5% 1/16W
R829	0700065	CF 68KΩ ±5% 1/16W
		TRANSISTORS;
Q501	2318433	TR 2SD2061
Q502	2318433	TR 2SD2061
Q403L,R	2319052	TR HIT8050C

SYMBOL NO.	PARTS NO.	DESCRIPTION
		DIODES;
D407	2398921	DI 1N4531T
D605	2398081	DI 1N4148
		MISCELLANEOUS;
CF203	2138122	CERAMIC FILTER 10.7M
⚠ JK602	2678882	DC JACK
		CABINET CHASSIS
1	3237942	FRONT CASE SASS
2	4862993	REAR CASE SASS [for ER]
	4862994	REAR CASE SASS [for ER(BS)]
3	3309403	BUTTON 12
4	3268971	M BUTTON
5	3309431	KNOB P
6	3809771	P ARM
7	3309441	KNOB D
8	3367142	SPRING A
9	3309421	SNAP KNOB
10	4436664	TERMINAL
11	4436663	TERMINAL
12	3367067	SPRING
13	3367066	SPRING
14	3950093	BATTERY COVER
15	4480741	ANT TERMINAL
16	4480771	ANT SPRING
22	2757901	ROD ANTENNA
24	4621361	COUNTER BELT
25	3950382	DAMPER ASSY
26	3368685	EJECT SPRING
27	2589541	TN-521Z MECHA
28	2789694	MH COUNTER
29	4480761	REC LEVER
30	4831624	B FRAME (TN-21)
31	8506761	BUTTON LEVER SHAFT
32	3392444	BATTERY SPRING
33	4477521	BAT TERMINAL
34	3809781	SPEAKER BOX
35	2404141	SPEAKER 16
36	2712231	SP CORD
37	3237952	BUFFLE PLATE ASSY
38	4578972	BT FLANGE SCREW, (3X10)
39	3810842	CASSETTE DOOR L SASS
40	3810841	CASSETTE DOOR R SASS
41	3309411	VOL. KNOB

EXPLODED VIEW • VUE ECLATEE

• Cabinet
• Cabine

Nos. are reference Nos. of parts list.
Les numéros se réfèrent à la list de pièces



SYMBOL NO.	PARTS NO.	DESCRIPTION
42	4006751	HANDLE ASSY
44	3809751	LED HOLDER A
45	3809761	LED HOLDER B
47	3800861	KNOB 18
48	4481572	RECORD PLATE
49	8741104	2x4 B.H. SCREW
50	3309451	CASSETTE BUTTON
51	26679222	SIEMEN PLUG
⚠ 54	2705942	POWER SUPPLY CORD [for ER]
⚠	2717901	AC POWER CORD [for ER(BS)]
55	3812852	INSULATOR RING
61	4481201	COUNTER BLACKET
62	4856326	B FLAME (TN-51)
63	4469352	TW MIRROR
64	4578972	3x10 BT SCREW (SP 4)
100	4577817	3x30 BT SCREW (SP.BOX 4)
101	8815111	2 LOCK WASHER
102	48190682	M2x4 SCREW (COUNTER BRACKET 2)
103	48196182	M2x9 SCREW
104	48190722	2x7 SCREW
105	4567412	3x8 DT SCREW (HEAT SINK/I.C. SCREW 3)
106	8691406	3x6 BT SCREW (HEAT SINK/I.C. SCREW 4)
107	8691410	3x10 BT SCREW (ANT SPRING 1)
108	8691412	3x12 BT SCREW (AC JACK 2)
109	8744412	3x12 BIND HEAD SCREW (ANT. 1)
110	4578976	3x20 BT SCREW (TRANSFORMER 4)
111	8691412	3x12 BT SCREW (DAMPER 2)
112	4833465	SCREW (A) (REC. LEVER 1)
113	8699412	3x12 BT SCREW B (MECHA 6)
114	8699410	3x10 BT SCREW B (PWB 2)
115	4577816	3x20 BT SCREW (HEAT SINK 1)
116	4577816	3x20 BT SCREW (DTS 7)
118	8691408	3x8 BT SCREW (COUNTER BRACKET 1)
119	8691408	3x8 BT SCREW (HEAT SINK U 2)
120	8699408	3x8 BT SCREW B (LINE IN 1)
121	4577816	3x20 BT SCREW (SET 5)
	2757996	FERRITE ANTENNA

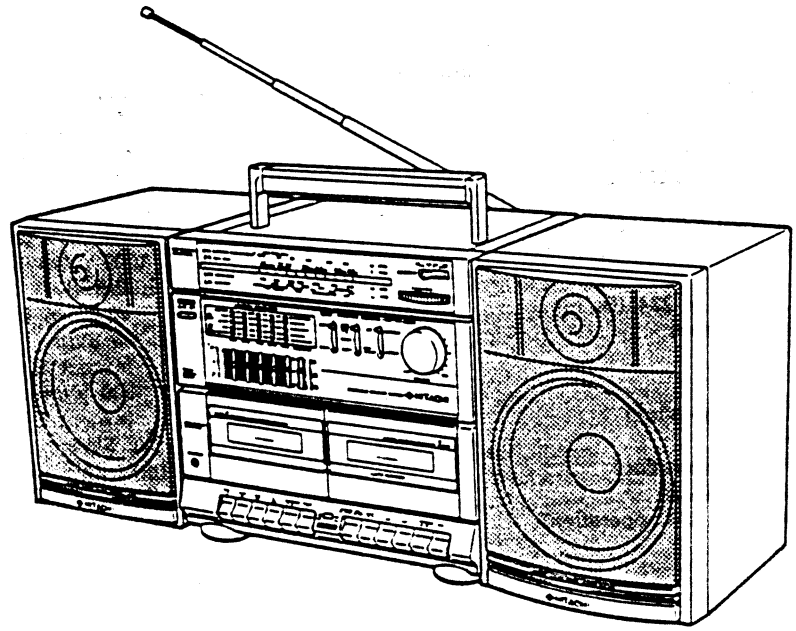
HITACHI
SERVICE MANUAL

TY	No. 624 EF

MS-W560
[H, HC, E, E(BS), W, W(UN), W(AU)]

TN-521ZSW-182

Neckermann
545/384



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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

PORTABLE COMPONENT SYSTEM

July 1989 YOKOHAMA WORKS 2564

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with ⚠ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

• GENERAL

Power supply	AC : 120V, 60 Hz [for H, HC] AC : 220V, 50 Hz [for E] AC : 240V, 50 Hz [for E(BS)] AC : 110–127/200–220/230–250V, 50/60 Hz [for W, W(UN), W(AU)] DC : 15V [IEC R20 ("D"CELL) x 10 or equivalent]
Power consumption	45W
Dimensions	661 (W) x 265 (H) x 234 (D) mm
Weight	8.7 kg (with batteries)

• AMPLIFIER SECTION

Audio output	80W P.M.P (AC operation) [for E, E(BS)] 150W P.M.P (AC operation) [for W, W(UN), W(AU)] 8W/CH (10% T.H.D. AC operation)
Speakers	16cm, 4Ω (x2) 5cm, 4Ω (x2)

• TUNER SECTION

Circuit system	FM/SW/MW/LW-4bands superheterodyne [for E, E(BS)] FM/SW2/SW1/MW(AM)-4bands superheterodyne [except E, E(BS)]
Tuning range	FM : 88 to 108 MHz [except E, E(BS)] FM : 87.5 to 108 MHz [for E, E(BS)] SW: 6 to 18 MHz [for E, E(BS)] SW2 : 7 to 22 MHz [except E, E(BS)] SW1 : 2.3 to 7 MHz [except E, E(BS)] MW(AM) : 530 to 1,605 kHz LW : 150 to 285 kHz [for E, E(BS)]
Intermediate	FM : 10.7MHz SW/MW/LW : 465kHz [for E, E(BS)] SW2/SW1/MW(AM) : 455kHz [except E, E(BS)]
Sensitivity	FM 8 µV (S/N 26 dB) AM (MW) 900 µV/m (S/N 20 dB) LW 1000 µV/m (S/N 20 dB) [for E, E(BS)] SW 40 µV/m [for E, E(BS)] SW2 40 µV/m [except E, E(BS)] SW1 300 µV/m [except E, E(BS)]
Antennas	FM SW SW2: Telescopic antenna (aerial) AM (MW/LW/SW1) : Ferrite core antenna

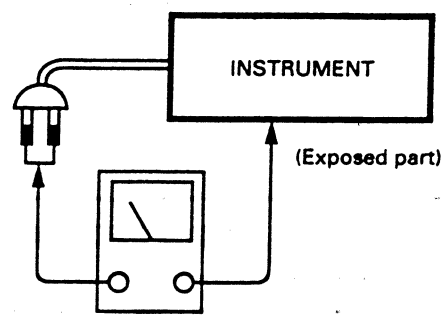
• TAPE DECK SECTION

Tape	Compact cassette
Tape speed	4.75 cm/s
Recording system and Bias frequency	AC bias, 85 kHz
Track system	4 tracks stereo
Erasing system	AC erase
Frequency Response	Normal 70–12,000 Hz CrO2 70–14,000 Hz
Signal to noise ratio	50 dB
Crosstalk	Between Track 60 dB Between Channel 40 dB
Erase ratio	65 dB
Motor	DC motor
Wow and Flutter	0.25% (WRMS)

* Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers.

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

- **Checking method**
  Operate switch is set to ON.
  Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.



Insulation tester (DC 500V)

PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

1. Etant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnés du symbole ⚠ dans le plan de circuit et sur le plan de base.
2. Avant de retourner l'appareil répare au client le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

CARACTÉRISTIQUE TEQUNIQUES

• GÉNÉRAL

Alimentation	CA : 120V, 60 Hz [pour H, HC] CA : 220V, 50 Hz [pour E] CA : 240V, 50 Hz [pour E(BS) CA : 110–127/200–220/230–250V, 50/60 Hz [pour W, W(UN), W(AU)] Courant continu : 15V [10 piles IEC R20 (pile "D") ou des piles équivalentes]
Consommation électrique	45W
Dimensions	661 (L) x 265 (H) x 234 (P) mm
Poids	8,7 kg (piles comprises)

• SECTION AMPLIFICATEUR

Sortie audio	80W PMP (fonctionnement sur le secteur) [pour E, E(BS)] 150W PMP (fonctionnement sur le secteur) [pour W,W(UN) W(AU)] 8W/canal (CA à 10% D.H.T.) [pour E, E(BS)]
Haut-parleurs	16cm, 4Ω(x2) 5cm, 4Ω(x2)

• SECTION TUNER

Systéme de circuit	4 gammes d'ondes FM/OC/PO/GO à superhétérodyne [pour E, E(BS)] 4 gammes d'ondes FM/OC2/OC1/PO(AM) à superhétérodyne [sauf E, E(BS)]
Gammes d'accord	FM : De 88 à 108 MHz [sauf E, E(BS)] FM : De 87,5 à 108 MHz [pour E, E(BS)] OC : De 6 à 18 MHz [pour E, E(BS)] OC2 : De 7 à 22 MHz [sauf E, E(BS)] OC1 : De 2,3 à 7 MHz [sauf E, E(BS)] PO(AM) : De 530 à 1605 kHz GO : De 150 à 285 kHz [pour E, E(BS)]
Fréquence intermédiaire	FM : 10.7 MHz OC/PO/GO : 465kHz [pour E, E(BS)] OC2/OC1/PO(AM) : 455 kHz [sauf E, E(BS)]
Sensibilité	MF 8 µV (S/B 26 dB) AM (PO) 900 µV/m (S/B 20 dB) GO 1000 µV/m (S/B 20 dB) [pour E, E(BS)] OC 40 µV/m [pour E, E(BS)] OC2 40 µV/m [sauf E, E(BS)] OC1 300 µV/m[[sauf E, E(BS)]
Antenne	MF OC OC2 : Antenne télescopique (aérien) AM (PO/GO/OC1) : Antenne tore de ferrite

• SECTION MAGNETOCASSETTE

Bande	Compact cassette
Vitesse de défilement	4,75 cm/s
Système d'enregistrement/fréquence de polarisation	Polarisation CA, 85 kHz
Système de piste	4 pistes stéréo
Système d'effacement	Effacement CA
Frequency Response	Normal 70–12000 Hz CrO_2 70—14000 Hz
Rapport signal/bruit	50 dB
Transmodulation	Entre les pistes 60 dB Entre les canaux 40 dB
Taux d'effacement	65 dB
Moteur	DC motor
Pleurage et scintillement	0,25% (watts effic.)

* Mesures conformes aux réglements commerciaux de la Federal Trade Commission relatifs à la puissance de sortie des amplificateurs.

MAINTENANCE

■ Clean cabinet and panels when dirty

Clean off dirt on the surfaces with a dry cloth. Never use thinners, benzene or alcohol since these will damage the surface finish.

ENTRETIEN

■ Nettoyage du coffret et des panneaux lorsqu'ils sont sales

Enlever la poussière des surfaces de l'appareil avec un chiffon sec. Ne jamais utiliser de solvants, de benzine ou d'alcool car ils abîmeraient le fini des surfaces.

DISASSEMBLY

1. **Detaching the Speakers from the Unit**
   Push the speaker latch towards the center of the unit and pull the speaker box vertically upwards. (Fig. 1)

2. **Removing the Rear Case Assembly**
   Remove the five screws ① and the screw ②. Pull off Mic VR knob. Pull the front case assembly forward slightly to separate it from the rear case. Disconnect the connector Ⓐ. (Fig. 2)

3. **Removing the Printed Circuit Board M**
   Remove the screw ③ and pull off the REC lever. Disconnect the four connectors Ⓑ and pull off the Volume knob. Remove the screw ④ holding the heat-dispersion fin. Remove the screw ⑤ holding the dial holder. The printed circuit board M is now free. When removing the printed circuit board M , take care not to damage the connector Ⓒ which connects it to the printed circuit board GE. (Fig. 3)

4. **Removing the Printed Circuit Board GE**
   Remove the two screws ⑥. The printed circuit board GE can now be removed. (Fig. 3)

5. **Removing the Power Supply Printed Circuit Board**
   Remove the two screws ⑦ and four screws ⑧ and disconnect the connector Ⓓ. Pull the power supply printed circuit board and shield plate assembly forwards out of the case. (Fig. 4)

6. **Removing the Mechanical Deck Assemblies**
   Remove the four connectors Ⓔ from the printed circuit board M. Open the cassette doors and remove the six screws ⑨. Remove the counter bracket fixing screw ⑩. Remove the deck chassis. (Fig. 5)
   *Remove the printed circuit board H/P: the part of the printed circuit board M which is supported by the deck chassis.

7. **Removing the Damper Assembly**
   Remove the screw ⑪ from each damper assembly and remove the assembly. (Fig. 6)

8. **Removing the Rod Antenna**
   Remove the screw ⑫ and pull out the rod antenna. (Fig. 7)

9. **Removing the Carrying Handle**
   Push the lock ribs in the rear case outwards. Each end of the carrying handle can be removed by pulling it towards the rear. (Fig. 7)

10. **Removing the Speakers**
    Remove the four screws ⑬ and remove the rear case of the speaker unit.
    Remove the four screws ⑭ and two screws ⑮ and the speakers can be removed.
    Follow the same procedure for the left and right speaker units. (Fig. 8)

DÉMONTAGE

1. **Dépose des haut-parleurs de l'appareil**
   Enfoncer le verrou de haut-parleur vers le centre de l'appareil, et tirer l'enceinte verticalement vers le haut. (Fig. 1)

2. **Dépose de l'ensemble du boîtier arriére**
   Retirer les cinq vis ① et la vis ②. Enlever VR bouton du micro en tirant dessus. Tirer l'ensemble du boîtier avant vers l'avant, afin de le séparer légérement du boîtier arriére. Débrancher le connecteur Ⓐ. (Fig. 2)

3. **Dépose de la plaquette de circuit imprimé M**
   Retirer la vis ③ et enlever le levier d'enregistrement (REC) en tirant. Débrancher les quatre connecteurs Ⓑ et enlever le bouton du volume en le tirant. Retirer la vis ④ retenant l'silette de dissipation thermique. Retirer la vis ⑤ retenant la support de cadran. La plaquette de circuit imprimé M est ainsi libérée. Lors du retrait de la plaquette de circuit imprimé M, prendre soin de ne pas endommager le connecteur Ⓒ qui la raccorde à la plaquette de circuit imprimé GE. (Fig. 3)

4. **Dépose de la plaquette de circuit imprimé GE**
   Retirer les deux vis ⑥. La plaquette de circuit imprimé GE peut alors être déposée. (Fig. 3)

5. **Dépose de la plaquette de circuit imprimé d'alimentation**
Retirer les deux vis ⑦ et les quatre vis ⑧, puis débrancher le connecteur Ⓓ. Tirer la plaquette de circuit imprimé d'alimentation et l'ensemble plaque de blindage vers l'avant, pour les sortir du boîtier. (Fig. 4)

6. **Dépose de ensembles de platine mécanique**
Débrancher les quatre connecteurs Ⓔ de la plaquette de circuit imprimé M. Ouvrir les trappes à cassette et enlever les six vis ⑨. Retirer la vis ⑩ d'assemblage de la support contraire. Déposer le châssis de platine. (Fig. 5)
*Déposer la plaquette de circuit imprimé H/P: la partie de la plaquette de circuit imprimé M qui est supportée par le châssis de platine.

7. **Dépose de l'ensemble amortisseur**
Retirer une vis ⑪ de chaque ensemble amortisseur, et déposer l'ensemble. (Fig. 6)

8. **Dépose du barreau d'antenne**
Retirer la vis ⑫ et enlever le barreau d'antenne en le tirant. (Fig. 7)

9. **Dépose de la poignée de transport**
Pousser les nervures de verrouillage du boîtier arriére vers l'extérieur.
Chaque extrémité de la poignées de transport peut être retirée en la tirant vers l'arriére. (Fig. 7)

10. **Dépose des haut-parleurs**
Retirer les quatre vis ⑬ et déposer le boîtier arriére de l'enceinte.
Retirer les quatre vis ⑭ et la deux vis ⑮ le haut-parleur peut alors être déposé.
Procéder de la même maniére pour les enceintes de gauche et de droite. (Fig. 8)

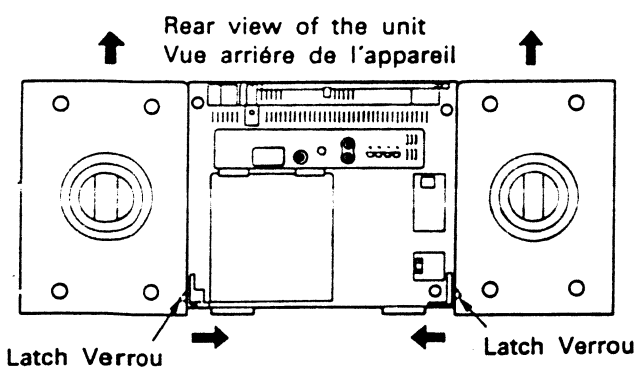


Fig. 1

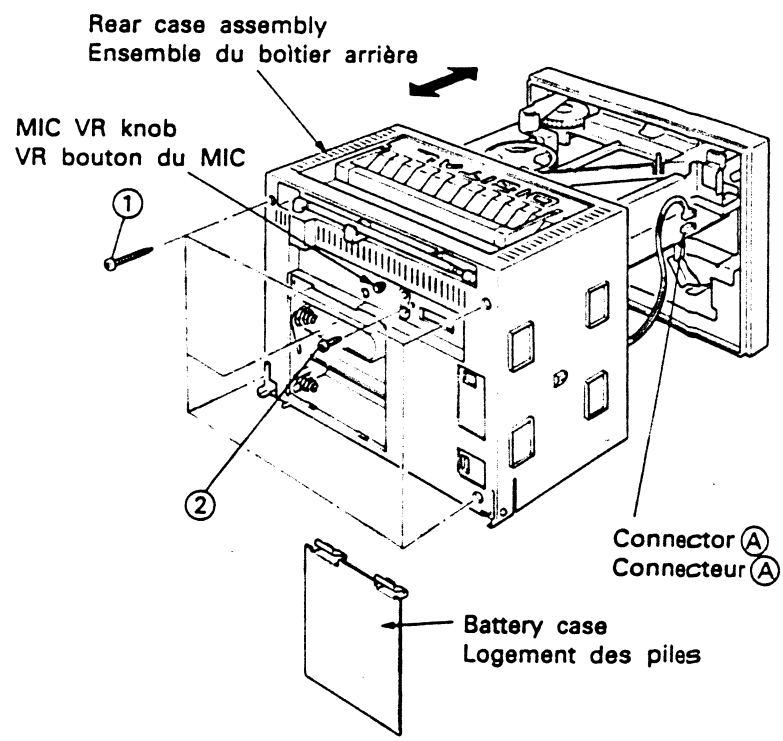


Fig. 2

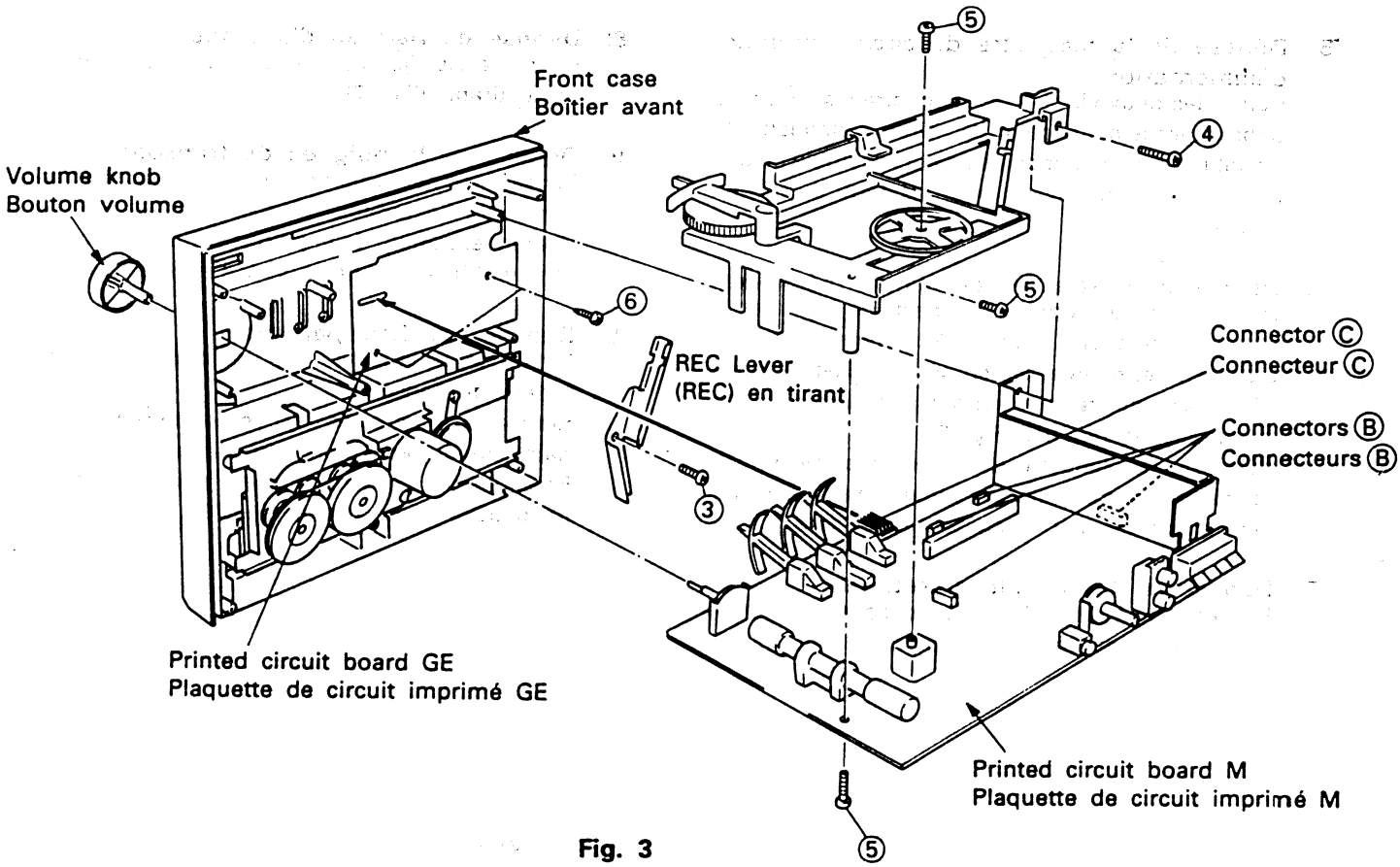

Front case
Boîtier avant
Volume knob
Bouton volume
REC Lever
(REC) en tirant
Connector Ⓒ
Connecteur Ⓒ
Connectors Ⓑ
Connecteurs Ⓑ
Printed circuit board GE
Plaquette de circuit imprimé GE
Printed circuit board M
Plaquette de circuit imprimé M

Fig. 3

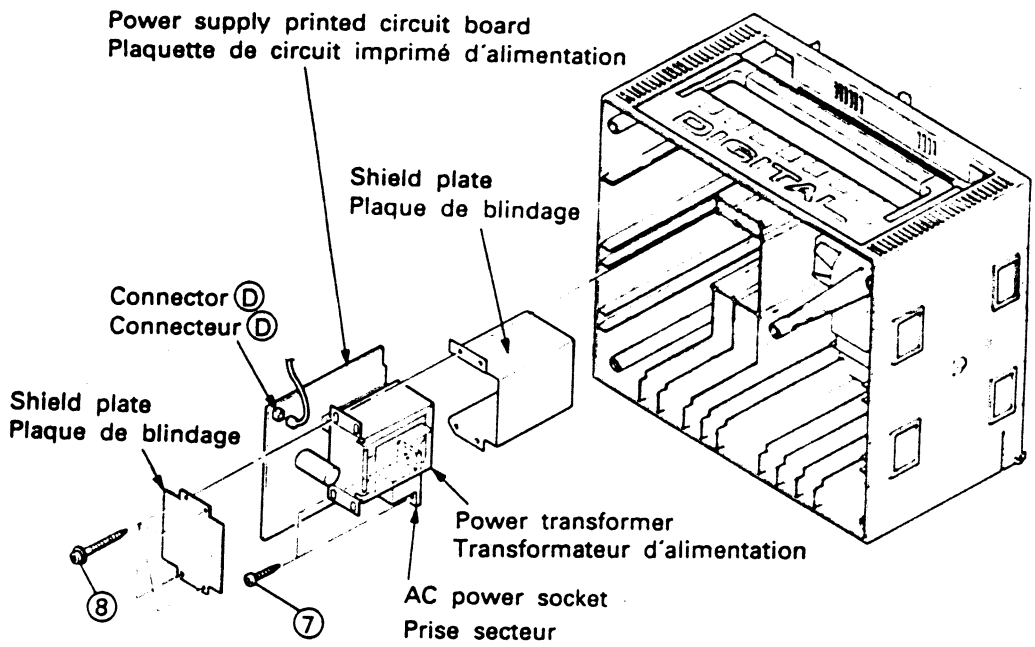

Power supply printed circuit board
Plaquette de circuit imprimé d'alimentation
Shield plate
Plaque de blindage
Connector Ⓓ
Connecteur Ⓓ
Shield plate
Plaque de blindage
Power transformer
Transformateur d'alimentation
AC power socket
Prise secteur

Fig. 4

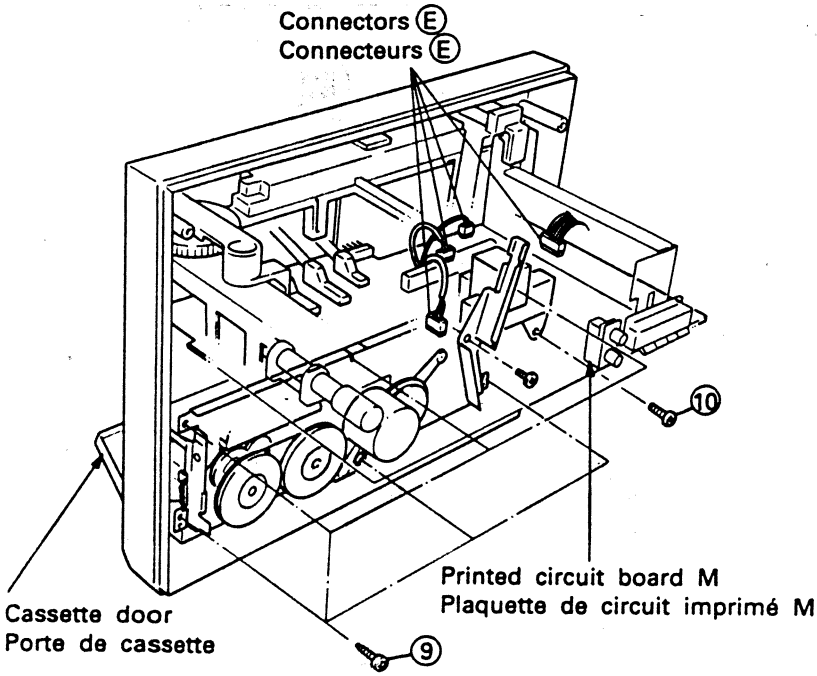


Fig. 5

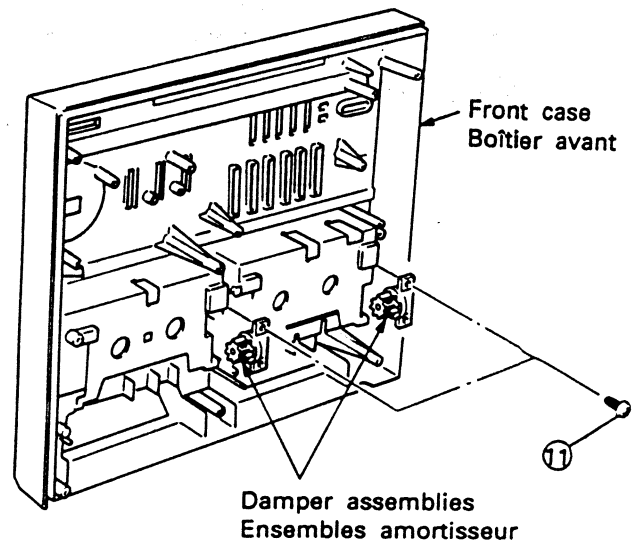


Fig. 6

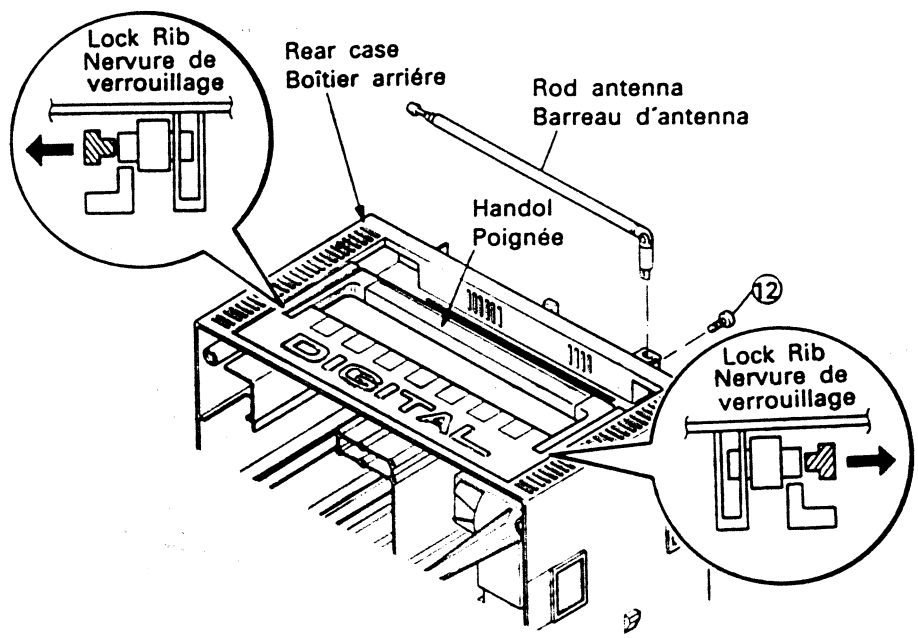


Fig. 7

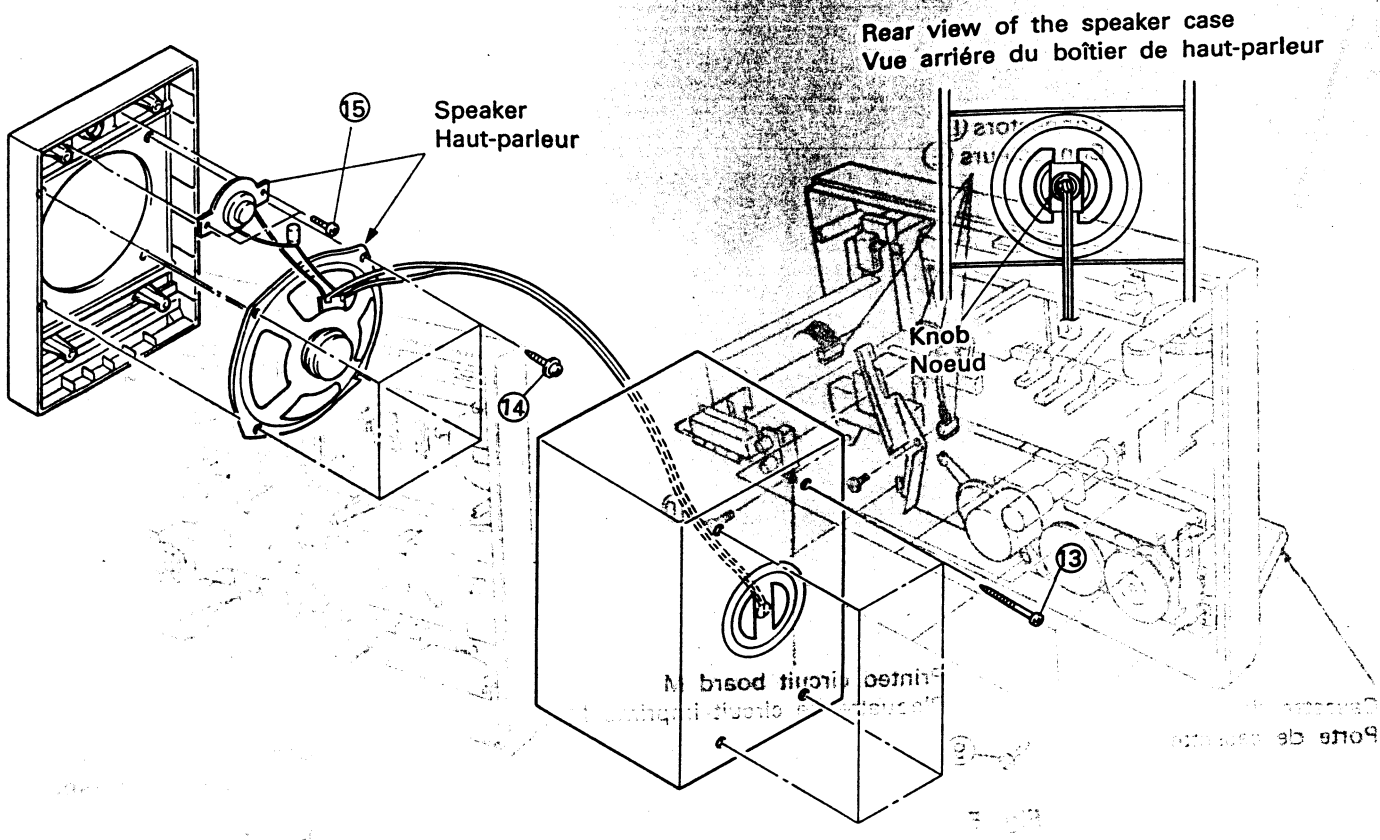


Fig. 8

DIAL CORD STRINGING

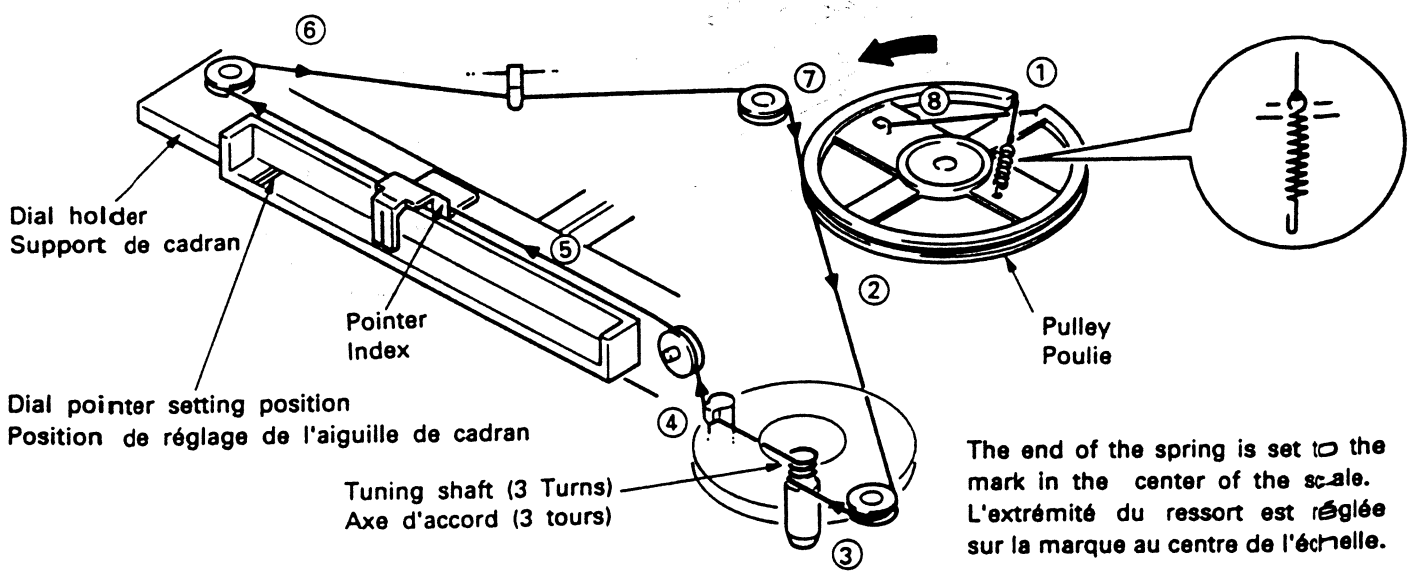
Stringing method

1. Turn the pulley fully anti-clockwise until it stop by the stopper on the dial holder.
2. String the dial cord in the direction of the arrows from (Nos. ①-⑧).
3. Set the dial pointer to setting position.

MISE EN PLACE DU CORDON DE CADRAN

Méthode d'enfilage

1. Tourner la poulie à fond dans le sens contraire des aiguilles d'une montre avan que s'arrête à la position d'arrêter sur le support de cadran.
2. Enfiler le cordon de cadran dans le sens de la fléches d'une (No. ① à ⑧).
3. Amener l'aiguille du cadran sur la position de réglage.

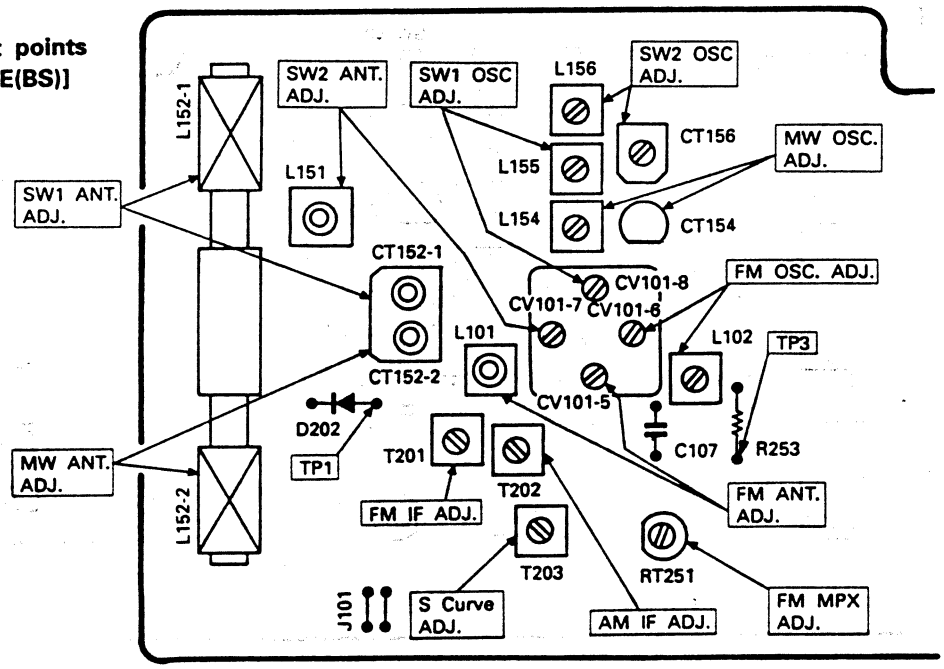


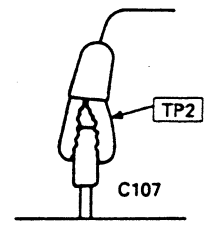
The end of the spring is set to the mark in the center of the scale.
L'extrémité du ressort est réglée sur la marque au centre de l'échelle.

ADJUSTMENT

1. RADIO SECTION

- **Adjustment points [except E, E(BS)]**

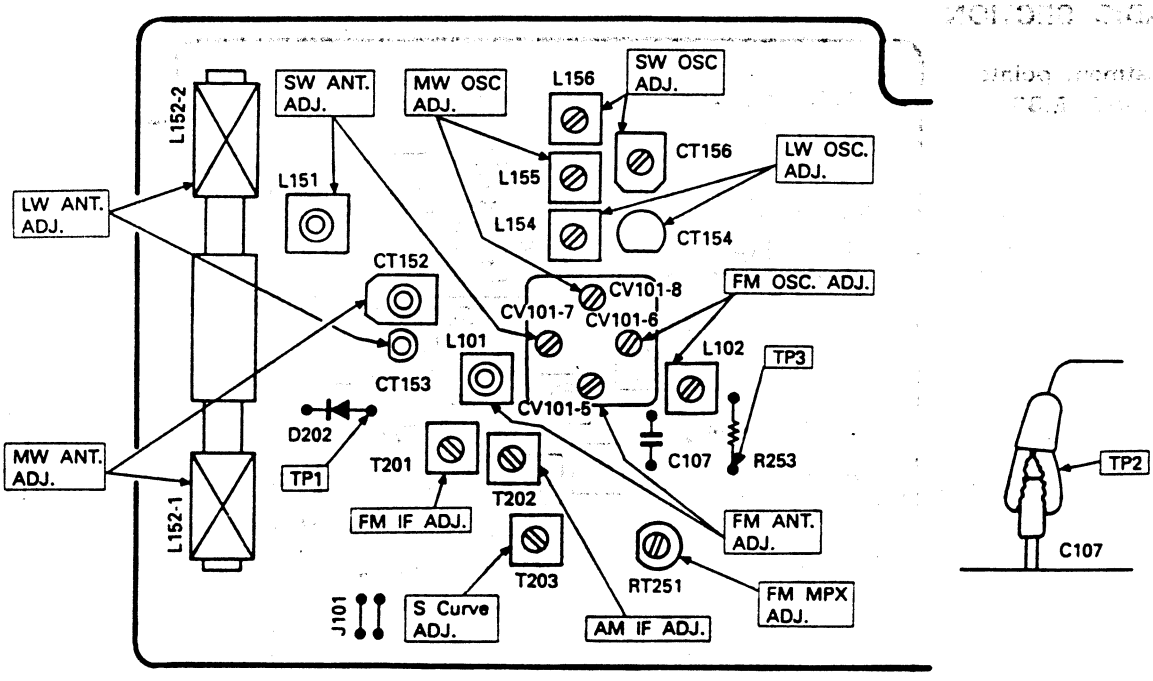




(1)-1 AM Section except E, E(BS) (FM/SW2/SW1/MW 4-bands)

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	• Genescope (455 kHz)	Ferrite antenna (Note 3)	TP.3	455 kHz	Highest	T202	(Note 1)
	(2)					Repeat Step (1)			
2	(1)	SW2 OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	TP.1 (through SW dummy antenna) (Note 2)	TP.3	6.7 MHz	Lowest	L156	Max.
	(2)					23 MHz	Highest	CT156	
	(3)					Repeat steps (1) and (2)			
3	(1)	SW2 ANT. (Tracking)				8 MHz	8 MHz	L151	Max.
	(2)					20 MHz	20 MHz	CV101-7	
	(3)					Repeat steps (1) and (2)			
4	(1)	SW1 OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Ferrite antenna (Note 3)	TP.3	2.2 MHz	Lowest	L155	Max.
	(2)					7.3 MHz	Highest	CV101-8	
	(3)					Repeat steps (1) and (2)			
5	(1)	SW1 ANT. (Tracking)				2.7 MHz	2.7 MHz	L152-1	Max.
	(2)					6.3 MHz	6.3 MHz	CT152-1	
	(3)					Repeat steps (1) and (2)			
6	(1)	MW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Ferrite antenna (Note 3)	TP.3	515 kHz	Lowest	L154	Max.
	(2)					1,650 kHz	Highest	CT154	
	(3)					Repeat steps (1) and (2)			
7	(1)	MW ANT. (Tracking)				600 kHz	600 kHz	L152-2	Max.
	(2)					1,400 kHz	1,400 kHz	CT152-2	
	(3)					Repeat steps (1) and (2)			

• **Adjustment points [for E, E(BS)]**



(1)-2 AM Section for E, E(BS) (FM/SW/MW/LW 4-bands)

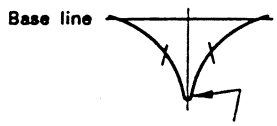
Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	AM IF	• Genescope (465 kHz)	Ferrite antenna (Note 3)	TP.3	465 kHz	Highest	T202	(Note 1)
	(2)					Repeat Step (1)			
2	(1)	SW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	TP.1 (through SW dummy antenna) (Note 2)	TP.3	5.8 MHz	Lowest	L156	Max.
	(2)					18.5 MHz	Highest	CT156	
	(3)					Repeat steps (1) and (2)			
3	(1)	SW ANT. (Tracking)				6.5 MHz	6.5 MHz	L151	Max.
	(2)					16 MHz	16 MHz	CV101-7	
	(3)					Repeat steps (1) and (2)			
4	(1)	MW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Ferrite antenna (Note 3)	TP.3	515 MHz	Lowest	L155	Max.
	(2)					1,650 MHz	Highest	CV101-8	
	(3)					Repeat steps (1) and (2)			
5	(1)	MW ANT. (Tracking)				600 MHz	600 MHz	L152-1	Max.
	(2)					1,400 MHz	1,400 MHz	CT152	
	(3)					Repeat steps (1) and (2)			
6	(1)	LW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope (RIF switch: B)	Ferrite antenna (Note 3)	TP.3	145 kHz	Lowest	L154	Max.
	(2)					290 kHz	Highest	CT154	
	(3)					Repeat steps (1) and (2)			
7	(1)	LW ANT. (Tracking)				160 kHz	160 kHz	L152-2	Max.
	(2)					270 kHz	270 kHz	CT153	
	(3)					Repeat steps (1) and (2)			

(2)-1 FM Section

Step		Adjustment Item	Measuring Instrument and Connection			Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
			Measuring Instrument	Input Terminal	Output Terminal				
1	(1)	FM IF	Turn T203 fully counterclockwise			10.7 MHz	Highest	T201	(Note 4)
	(2)	S-Curve	• Genescope (10.7 MHz)	TP.2	TP.3			T203	(Note 5)
2	(1)	FM OSC. (Covering)	• FM signal generator (400 Hz, 30% dev.) • Oscilloscope • VTVM	TP.1 (through FM dummy antenna) (Note 6)	TP.3	87.3 MHz	Lowest	L102	Max.
	(2)					109MHz	Highest	CV101-6	
	(3)					Repeat steps (1) and (2)			
3	(1)	FM ANT. (Tracking)				90MHz	90MHz	L101	Max.
	(2)					106 MHz	106 MHz	CV101-5	
	(3)					Repeat steps (1) and (2)			
4	(1)	FM MPX (Multiplex)	• Frequency counter	Connect a 10μF/25V electrolytic capacitor between the No.18 pin of IC201 and GND	No.11 pin of IC201	—	—	RT251	76 kHz ± 100Hz (Note 7)

Note:

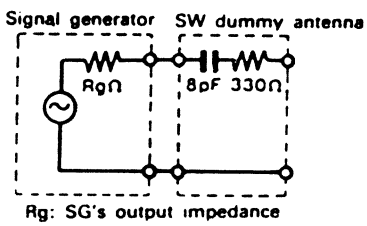
1. Feed in a weak signal from the genescope. Adjust T202 for maximum gain and the waveform of Fig. 9.



Adjust the genescope output so that there is a little noise riding on the leading edge.

Fig. 9

2. SW dummy antenna shows Fig. 10



Rg: SG's output impedance

Fig. 10

3. Connect AM signal generator to loop antenna, bring near to ferrite antenna.

4. Feed in a weak signal to TP.2 from the genescope. Adjust T201 for maximum gain and the waveform indicated in Fig. 11. If the center of the waveform cannot be lined up on the marker, adjust the right/left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.

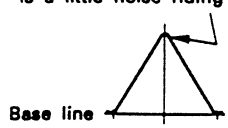


Fig. 11

5. Use the T203 core to form the S-curve shown in Fig. 12. Adjust the symmetry of A and B about point C for linearity.

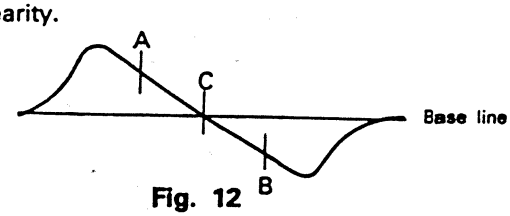
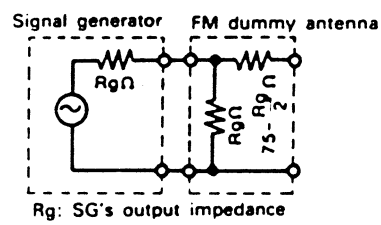


Fig. 12

6. FM dummy antenna shows Fig. 13



Rg: SG's output impedance

Fig. 13

7. Connect the frequency counter to the No. 11 pin of IC201 and connect a 220 kΩ resistor parallel with the frequency counter.

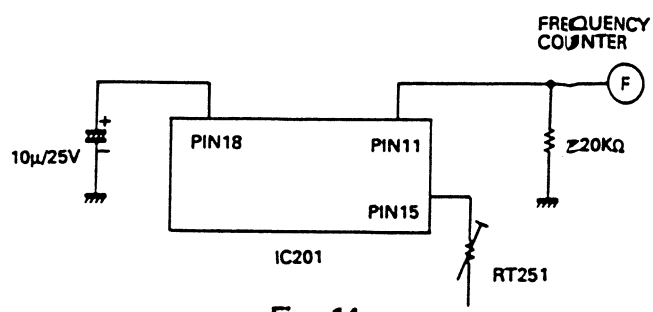


Fig. 14

2. TAPE RECORDER SECTION

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol. (Note 1)

Step	Adjustment Item	Measuring Instrument and Connection			Check Tape	Mode	Adjust	Reading
		Measuring Instrument	Input Terminal	Output Terminal				
1	Tape speed	• Frequency counter	—	Speaker terminal (4Ω load)	Tape speed adjustment tape (3kHz)	Playback (TAPE2)	RT501	3kHz±20Hz (Note 2)
2	Head azimuth	• VTVM	—	Speaker terminal (4Ω load)	Head azimuth adjustment tape (10kHz)	Playback	Azimuth adjusting screw	Output max. (Note 3)

Note:

1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. Should be confirm at TAPE 1 both in the FORWARD and REVERSE directions if the reading is outside the range of adjustment value, make readjustment so that the reading would be 2,975 to 3,030 Hz both in the FORWARD and REVERSE directions.
3. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

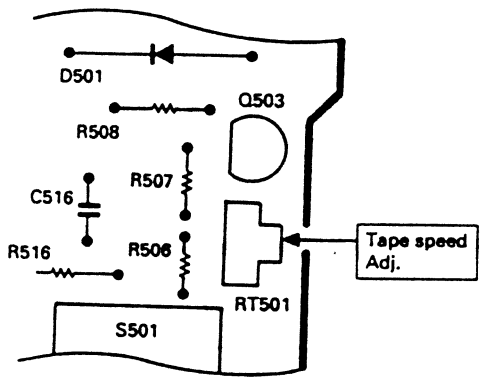


Fig. 15

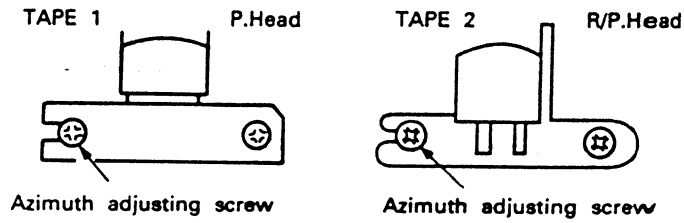


Fig. 16

INSPECTION OF MECHANISM

Item	Checking item		Reference value	Remarks
1	Pressure of pressure roller		300–500 g	Note
2	Take-up torque		30–60 g·m	
3	Fast forward/Rewind torque		50 g·cm or more	
4	Auto-Stop sensor operation force		40–75 g	
5	Brake torque		15 g·cm or more	Measured in stop mode
6	Back tension torque	Take-up	1–6 g·cm	
		Supply	1–4 g·cm	
7	Flywheel thrust gap		0.05–0.5 mm	
8	Button operation force	Play button	1.8 kg or less	
		FF button	1.0 kg or less	
		Rewind button	1.4 kg or less	
		Eject button	1.0 kg or less	
		Record button	2.3 kg or less	
		Pause button	1.0 kg or less	

Note:
Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

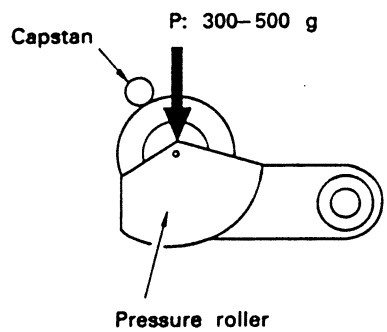
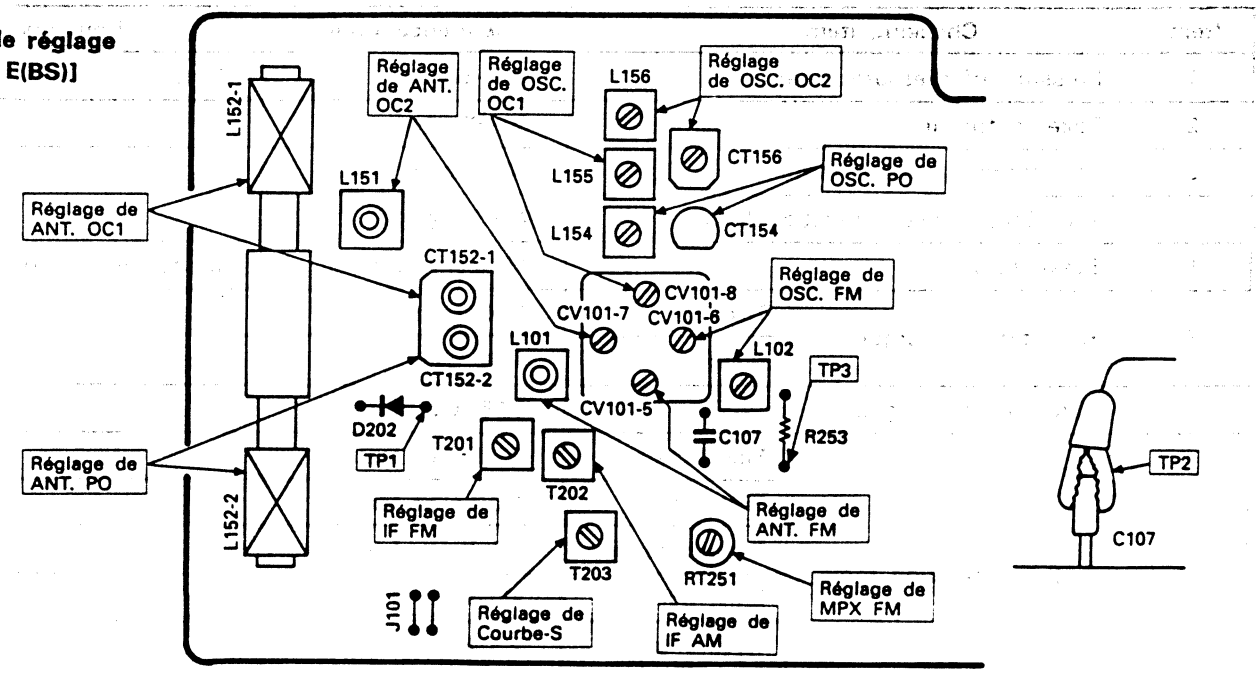


Fig. 17

1. SECTION RADIO

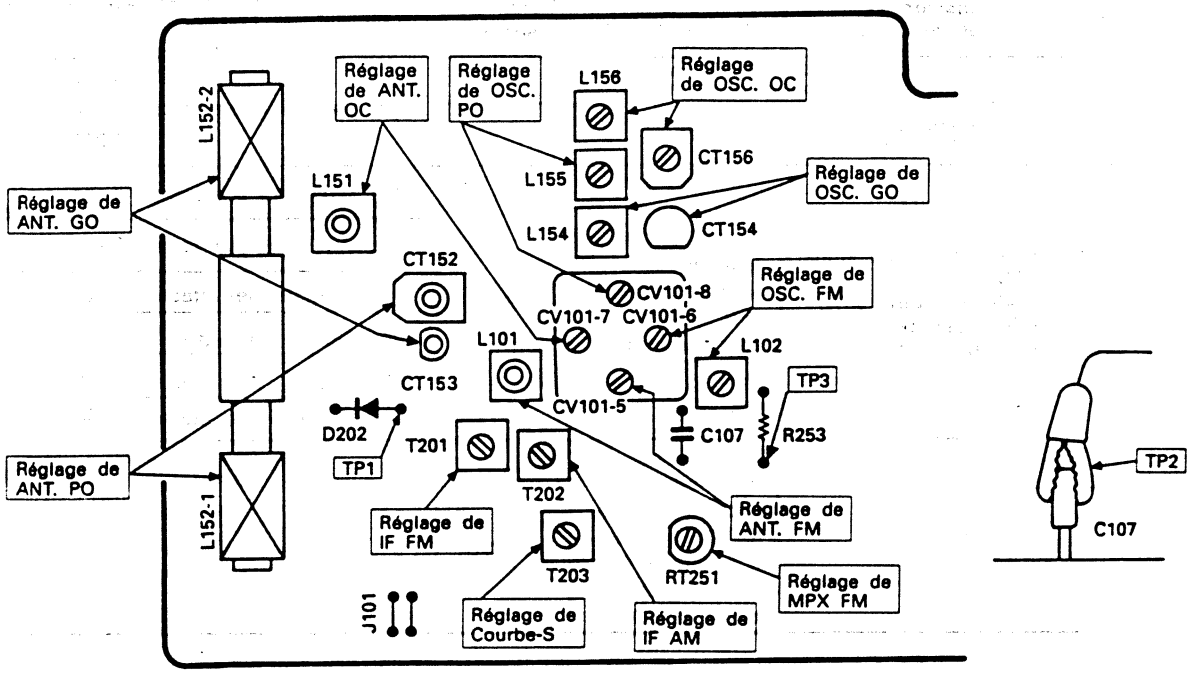
• **Points de réglage [sauf E, E(BS)]**



(1)-1 Section AM sauf E, E(BS) (FM/OC2/OC1/PO 4 gammes)

Etape		Objet de réglage	Instrument de mesure et branchements			Généscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	IF AM	• Généscope (455 kHz)	Antenne noyau en ferrite (Remarque 3)	TP.3	455 kHz	La plus haute	T202	(Remarque 1)
	(2)					Répéter étape (1)			
2	(1)	OSC. OC2 (coverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope	TP.1 (par le biais d'une antenna OC fictive) (Remarque 2)	TP.3	6,7 MHz	La plus basse	L156	Max.
	(2)					23 MHz	La plus haute	CT156	
	(3)					Répéter les étapes (1) et (2)			
3	(1)	ANT. OC (poursuite)				8 MHz	8 MHz	L151	Max.
	(2)					20 MHz	20 MHz	CV101-7	
	(3)					Répéter les étapes (1) et (2)			
4	(1)	OSC. OC1 (coverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope	Antenne noyau en ferrite (Remarque 3)	TP.3	2,2 MHz	La plus basse	L155	Max.
	(2)					7,3 MHz	La plus haute	CV101-8	
	(3)					Répéter les étapes (1) et (2)			
5	(1)	ANT. OC1 (poursuite)				2,7 MHz	2,7 MHz	L152-1	Max.
	(2)					6,3 MHz	6,3 MHz	CT152-1	
	(3)					Répéter les étapes (1) et (2)			
6	(1)	OSC. PO (coverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope	Antenne noyau en ferrite (Remarque 3)	TP.3	515 kHz	La plus basse	L154	Max.
	(2)					1650 kHz	La plus haute	CT154	
	(3)					Répéter les étapes (1) et (2)			
7	(1)	ANT. PO (poursuite)				600 kHz	600 kHz	L152-2	Max.
	(2)					1400 kHz	1400 kHz	CT152-2	
	(3)					Répéter les étapes (1) et (2)			

• **Points de réglage**
[pour E, E(BS)]



(1)-2 Section AM pour E, E(BS) (FM/OC/PO/GO 4 gammes)

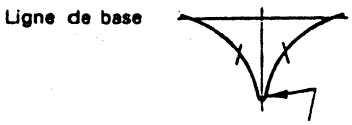
Etape		Objet de réglage	Instrument de mesure et branchements			Générateur ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	IF AM	• Générateur (465 kHz)	Antenne noyau en ferrite (Remarque 3)	TP.3	465 kHz	La plus haute	T202	(Remarque 1)
	(2)					Répéter étape (1)			
2	(1)	OSC. OC (couverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope	TP.1 (par le biais d'une antenna OC fictive) (Remarque 2)	TP.3	5,8 MHz	La plus basse	L156	Max.
	(2)					18,5 MHz	La plus haute	CT156	
	(3)					Répéter les étapes (1) et (2)			
3	(1)	ANT. OC (poursuite)				6,5 MHz	6,5 MHz	L151	Max.
	(2)					16 MHz	16 MHz	CV101-7	
	(3)					Répéter les étapes (1) et (2)			
4	(1)	OSC. PO (couverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope	Antenne noyau en ferrite (Remarque 3)	TP.3	515 MHz	La plus basse	L155	Max.
	(2)					1650 MHz	La plus haute	CV101-8	
	(3)					Répéter les étapes (1) et (2)			
5	(1)	ANT. PO (poursuite)				600 MHz	600 MHz	L152-1	Max.
	(2)					1400 MHz	1400 MHz	CT152	
	(3)					Répéter les étapes (1) et (2)			
6	(1)	OSC. GO (couverture)	• Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope (Commutateur de RIF: B)	Antenne noyau en ferrite (Remarque 3)	TP.3	145 kHz	La plus basse	L154	Max.
	(2)					290 kHz	La plus haute	CT154	
	(3)					Répéter les étapes (1) et (2)			
7	(1)	ANT. GO (poursuite)				160 kHz	160 kHz	L152-2	Max.
	(2)					270 kHz	270 kHz	CT153	
	(3)					Répéter les étapes (1) et (2)			

(2)-1 Section FM

Etape		Objet du réglage	Instrument de mesure et branchement			Génèscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	IF FM	Tourner T201 à fond dans le sens des aiguilles d'une montre			10,7 MHz	La plus haute	T201	(Remarque 4)
	(2)	Coubre-S	• Génèscope (10,7 MHz)	TP.2	TP.3			T203	(Remarque 5)
2	(1)	OSC. FM (couverture)	• Générateur de signal FM (400 Hz, dév. 30%) • Oscilloscope • VTVM	TP.1 (par le biais d'une antenna FM fictive) (Remarque 6)	TP.3	87.3 MHz	La plus basse	L102	Max.
	(2)					109 MHz	La plus haute	CV101-6	
	(3)					Répéter les étapes (1) et (2)			
3	(1)	ANT. FM (poursuite)				90 MHz	90 MHz	L101	Max.
	(2)					106 MHz	106 MHz	CV101-5	
	(3)					Répéter les étapes (1) et (2)			
4	(1)	MPX FM (Multiplex)	• Féquencemétre	Brancher un condensateur électrolytique de 10µF/25V entre la broche n°18 du IC201 et la masse (GND).	Broche n°11 du IC201	—	—	RT201	76 kHz ±50Hz (Remarque 5)

Remarque:

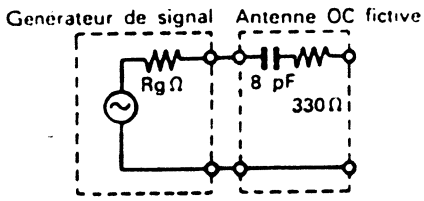
1. Appliquer un signal faible du génèscope. Régler T202 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 9.



Régler la sortie du génèscope de façon à ce qu'il y ait un peu de bruit au niveau du front d'onde.

Fig. 9

2. Antenne OC fictive



Rg : impédance de sortie du generateur de signal

Fig. 10

3. Relier le générateur de signal AM à l'antenne-cadre. La rapprocher de l'antenne noyau en ferrite.

4. Appliquer un signal faible du génèscope sur TP.2. Régler T201 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 11. Si le centre de la forme d'onde ne peut pas être aligné sur le marqueur, régler la balance droite/gauche.

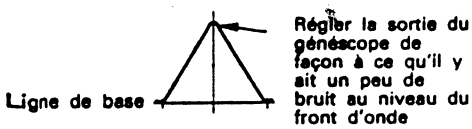


Fig. 11

5. Utiliser le noyau de T203 pour former la coubre-S indiquée sur la Fig. 12. Régler la symétrie de A et B au niveau du point C pour la linéarité.

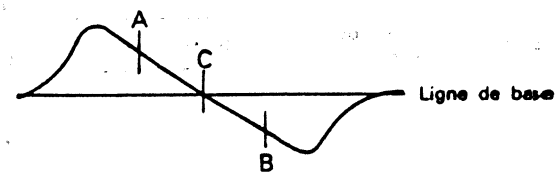
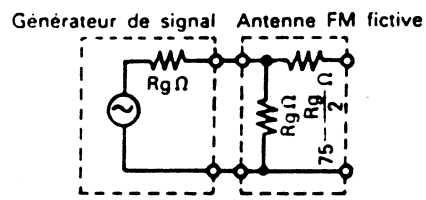


Fig. 12

6. Antenne FM fictive



Rg : impédance de sortie du générateur de signal

Fig. 13

7. Relier le fréquencemètre sur la broche n°11 du IC201 et brancher une résistance de 220 kΩ en parallèle avec le fréquencemètre.

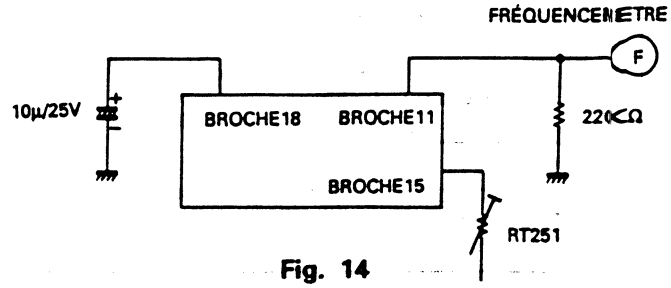


Fig. 14

2. SECTION LECTEUR-ENREGISTREUR DE CASSETTE

Effectuer les réglages suivants dans l'ordre indiqué après avoir nettoyé la tête, le galet-presseur et le cabestan avec un coton-tige imbibé d'alcool. (Remarque 1)

Etape	Objet de réglage	Instrument de mesure et branchements			Band de vérification	Mode	Réglage	Lecture
		Instrument de mesure	Borne d'entrée	Borne de sortie				
1	Vitesse de défilement	• Fréquence-mètre	—	Borne de hautparleur (charge de 4Ω)	Bande de réglage de vitesse de défilement (3 kHz)	Reproduction	RT501	3kHz ± 20Hz (Remarque 2)
2	Azimuth de tête	• VTVM	—	Borne de hautparleur (charge de 4Ω)	Bande de réglage d'azimuth de tête (10 kHz)	Reproduction	Vis de réglage d'azimuth	Sortie max. (Remarque 3)

Remarque:

1. Régler dans une plage de 30 sec. après une mise sous tension de 20 minutes au moins.
2. Vérifier la Platine 1 à la fois dans les directions FORWARD (avant) et REVERSE (arrière). Si la lecture est en dehors de la plage des valeurs de réglage, faire le réglage de facon à ce que la lecture soit entre 2975 et 3030 Hz dans les directions FORWARD (avant) et REVERSE (arrière).
3. Si les valeurs maximales des deux canaux diffèrent, régler sur la valeur maximale du canal de gauche (L). Dans ce cas, la différence entre les valeurs maximales des deux canaux doit être comprise dans une plage de 3 dB.

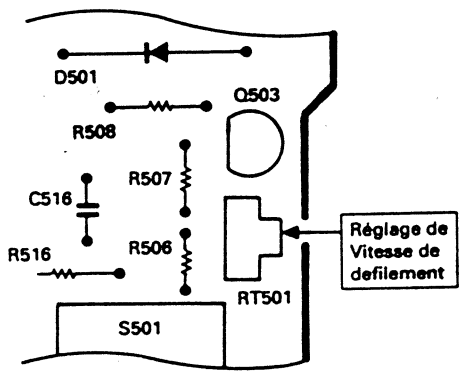


Fig. 15

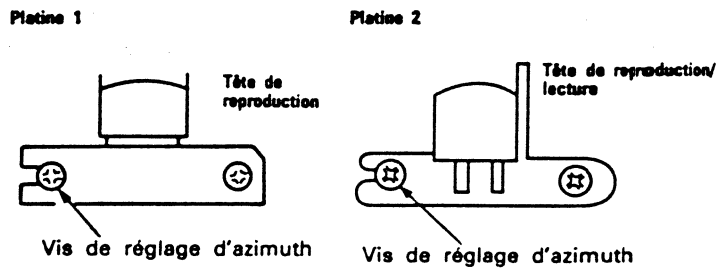


Fig. 16

INSPECTION DU MECANISME

Point	Poste de vérification		Valeur de référence	Remarques
1	Pression du galet-presseur		300–500 g	Remarque
2	Couple d'enroulage		30–60 g·m	
3	Couple d'avancé rapide/rembobinage rapide		50 g·cm or more	
4	Effort à l'utilisation du détecteur pour arrêt automatique		40–75 g	
5	Couple de freinage		15 g·cm or more	Mesuré en mode d'arrêt
6	Couple de tention de recul	Enroulage	1–6 g·cm	
		Alimentation	1–4 g·cm	
7	Intervalle de poussé du volant		0,05–0.5 mm	
8	Button operation force	Touche de reproduction	1,8 kg ou moins	
		Touche d'avancée rapide	1,0 kg ou moins	
		Touche de rembobinage	1,4 kg ou moins	
		Touche d'éjection	1,0 kg ou moins	
		Touche d'enregistrement	2,3 kg ou moins	
		Touche de pause	1,0 kg ou moins	

Remarque:
Placez cet appareil en mode de reproduction, appuyez sur le galet-presseur dans le sens de la flèche à l'aide d'un calibre de tension type éventail, et mesurez la pression lorsque le galet-presseur est libéré du cabestan.

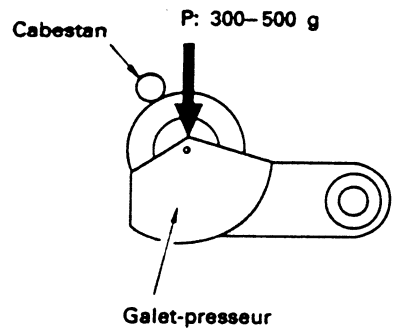


Fig. 17

LUBRICATION

Apply one or two drops of pan motor oil or sonic slider oil to rotating parts. Coat sliding parts with Molycoat (EL-10M).
Lubricate once a year or every 1,000 hours of operation.
Do not let oil contact belts or idlers.

Rotating parts	Metal to metal	Pan motor oil (10W-40)
	Plastics to metal	Sonic slider oil (#1600)
Sliding parts	(Note) Plastics to plastics Plastics to metal	Molycoat (EL-10M)
Spring vibration prevention		Flyol (GB-TS-1)

NOTE:
When front frame and slide knob are replaced, coat both contacting parts lightly with white grease.

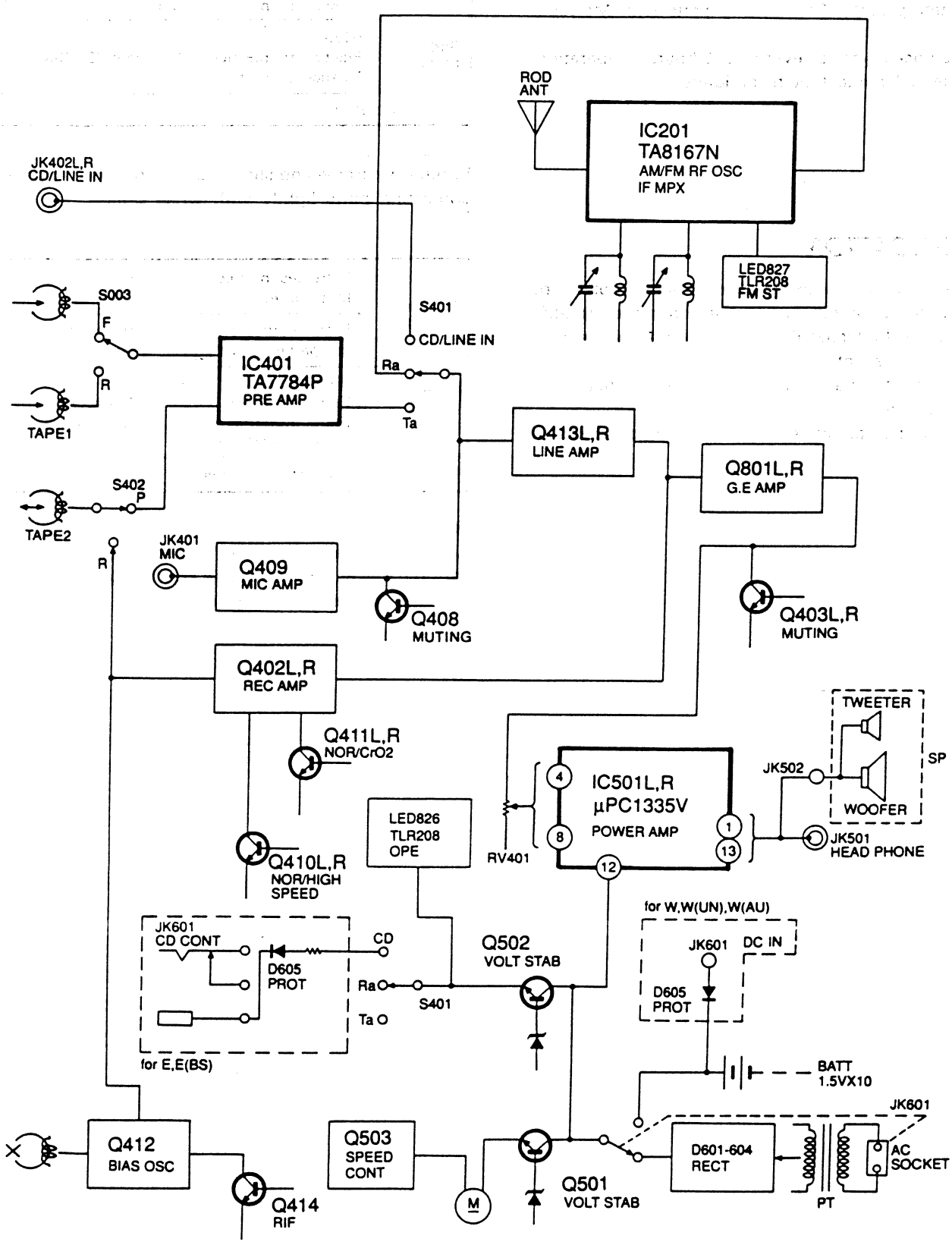
LUBRIFICATION

Appliquer une ou deux gouttes d'huile moteur ou d'huile Sonic pour curseur, sur les membres rotatifs. De la graisse Molycoat (EL-10M) est appliquée sur les membres coulissants.
Lubrifier une fois par an ou toutes les 1,000 heures de fonctionnement.
Veiller à ne pas appliquer d'huile sur les courroies ou les galets.

Membres rotatifs	Entre les parties Métalliques	Huile moteur (10W-40)
	Entre le moulage et les parties métalliques	Huile Sonic pour curseur (#1600)
Membres Coulis-sans	(Remarque) Entre moulures Entre moulures et pièces métalliques	Molycoat (EL-10M)
Prévention de vibration de ressort		Floyl (GB-TS-1)

Remarque:
Lorsque le châssis avant et le boulon curseur doivent être remplacés, appliquer une couche légère de graisse blanche sur les parties de contact.

ıIAGRAM • DIAGRAMME SYNOPTIQUE



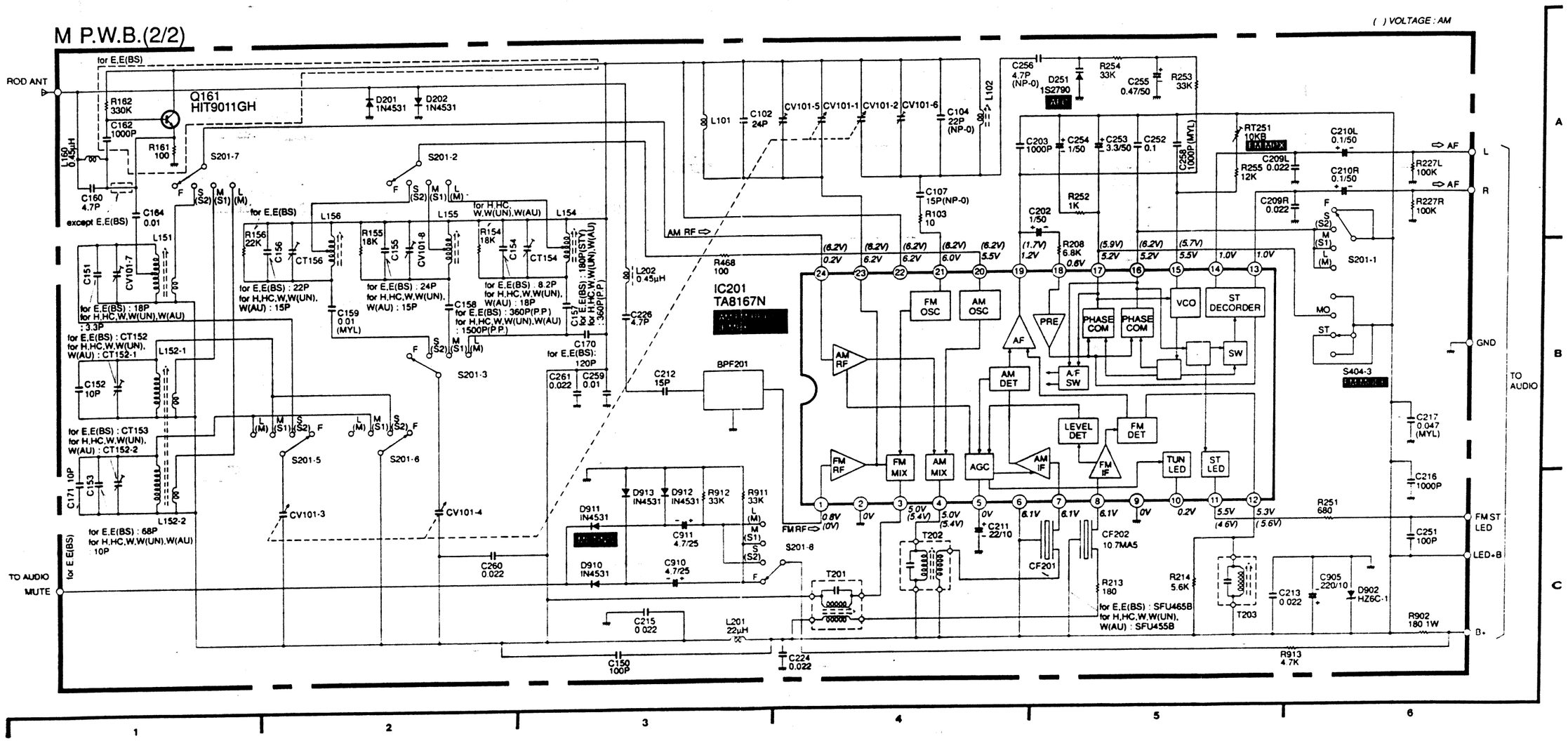
CIRCUIT DIAGRAM • DIAGRAMME DES CIRCUITS

TUNER SECTION

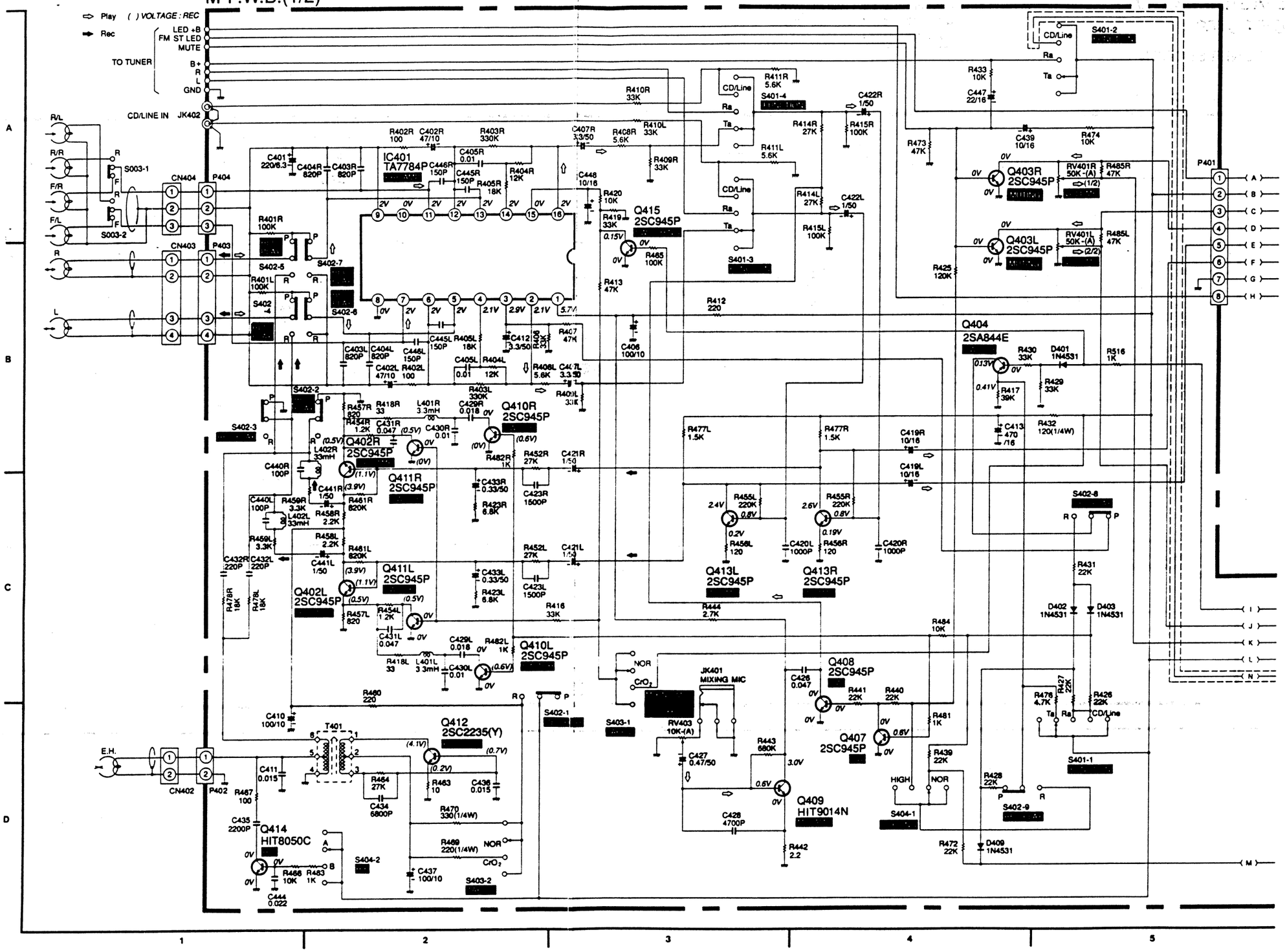
CAUTION
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10mmø.

M P.W.B.(2/2)

( ) VOLTAGE : AM



M P.W.B.(1/2)


Play ( ) VOLTAGE : REC
Rec
LED +B
FM ST LED
MUTE
TO TUNER
B+
R
L
GND
CD/LINE IN JK402
R/L
R/R
F/R
F/L
R
L
S003-1
S003-2
CN404
P404
CN403
P403
IC401 TA7784P
Q415 2SC945P
Q410R 2SC945P
Q402R 2SC945P
Q411R 2SC945P
Q411L 2SC945P
Q402L 2SC945P
Q410L 2SC945P
Q412 2SC2235(Y)
Q414 HIT8050C
Q413L 2SC945P
Q413R 2SC945P
Q408 2SC945P
Q407 2SC945P
Q409 HIT9014N
Q404 2SA844E
Q403R 2SC945P
Q403L 2SC945P
JK401 MIXING MIC
T401
D401 1N4531
D402 1N4531
D403 1N4531
D409 1N4531
S401-2
S401-4
S401-3
S402-2
S402-3
S402-5
S402-7
S402-6
S402-8
S402-9
S403-1
S403-2
S404-1
S404-2
S401-1
P401
CN402
P402
E.H.
CD/Line
NOR
HIGH
CrO2
A
B
R401R 100K
R401L 100K
R410R 33K
R410L 33K
R411R 5.6K
R411L 5.6K
R414R 27K
R414L 27K
R415R 100K
R415L 100K
R422R 1/50
R422L 1/50
R433 10K
R473 47K
R474 10K
R485R 47K
R485L 47K
R425 120K
R516 1K
R430 33K
R429 33K
R417 39K
R432 120(1/4W)
R431 22K
R484 10K
R481 1K
R476 4.7K
R427 22K
R426 22K
R428 22K
R439 22K
R440 22K
R441 22K
R443 680K
R442 2.2
R472 22K
R477L 1.5K
R477R 1.5K
R455L 220K
R455R 220K
R456L 120
R456R 120
C420L 1000P
C420R 1000P
C419R 10/16
C419L 10/16
C439 10/16
C447 22/16
C448 10/16
C422R 1/50
C422L 1/50
C413 470/16
C426 0.047
C427 0.47/50
C428 4700P
R444 2.7K
R416 33K
R460 220
R412 220
R470 330(1/4W)
R469 220(1/4W)
R463 10
R464 27K
R466 10K
R483 1K
R487 100
R457R 820
R457L 820
R454R 1.2K
R454L 1.2K
R458R 2.2K
R458L 2.2K
R459R 3.3K
R459L 3.3K
R461R 820K
R461L 820K
R452R 27K
R452L 27K
R482R 1K
R482L 1K
R423R 6.8K
R423L 6.8K
R418R 33
R418L 33
R419 33K
R420 10K
R465 100K
R413 47K
R408R 5.6K
R408L 5.6K
R409R 33K
R409L 33K
R407 47K
R405R 18K
R405L 18K
R404R 12K
R404L 12K
R403R 330K
R403L 330K
R402R 100
R402L 100
C401 220/6.3
C404R 820P
C403R 820P
C405R 0.01
C446R 150P
C445R 150P
C403L 820P
C404L 820P
C446L 150P
C445L 150P
C405L 0.01
C402L 47/10
C402R 47/10
C407R 3.3/50
C412 3.3/50
C406 100/10
C429R 0.018
C429L 0.018
C430R 0.01
C430L 0.01
C431R 0.047
C431L 0.047
C421R 1/50
C421L 1/50
C423R 1500P
C423L 1500P
C433R 0.33/50
C433L 0.33/50
C441R 1/50
C441L 1/50
C440R 100P
C440L 100P
C432R 220P
C432L 220P
C478R 18K
C478L 18K
L401R 3.3mH
L401L 3.3mH
L402R 33mH
L402L 33mH
C410 100/10
C411 0.015
C436 0.015
C434 6800P
C435 2200P
C437 100/10
C444 0.022
RV401R 50K-(A) (1/2)
RV401L 50K-(A) (2/2)
RV403 10K-(A)
0V
2V
2.1V
2.9V
5.7V
0.15V
0.41V
0.13V
3.0V
0.6V
0.8V
2.4V
2.6V
0.2V
0.19V
(0.5V)
(1.1V)
(3.9V)
(0V)
(0.6V)
(4.1V)
(0.7V)
(0.2V)

GE P.W.B.

M P.W.B.(1/2)

IC501
µPC1335V

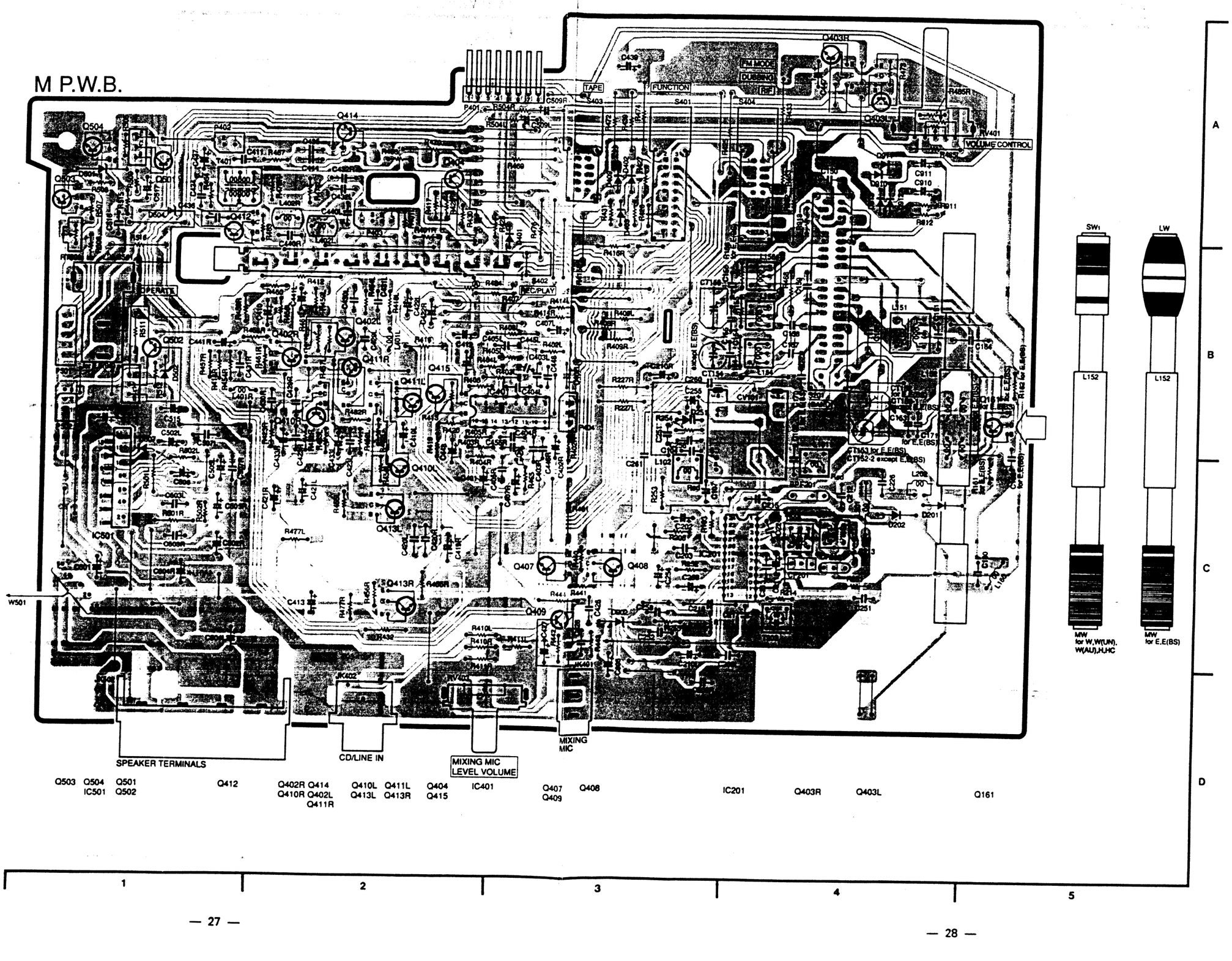
HP P.W.B.

for E,E(BS),H,HC P P.W.B.

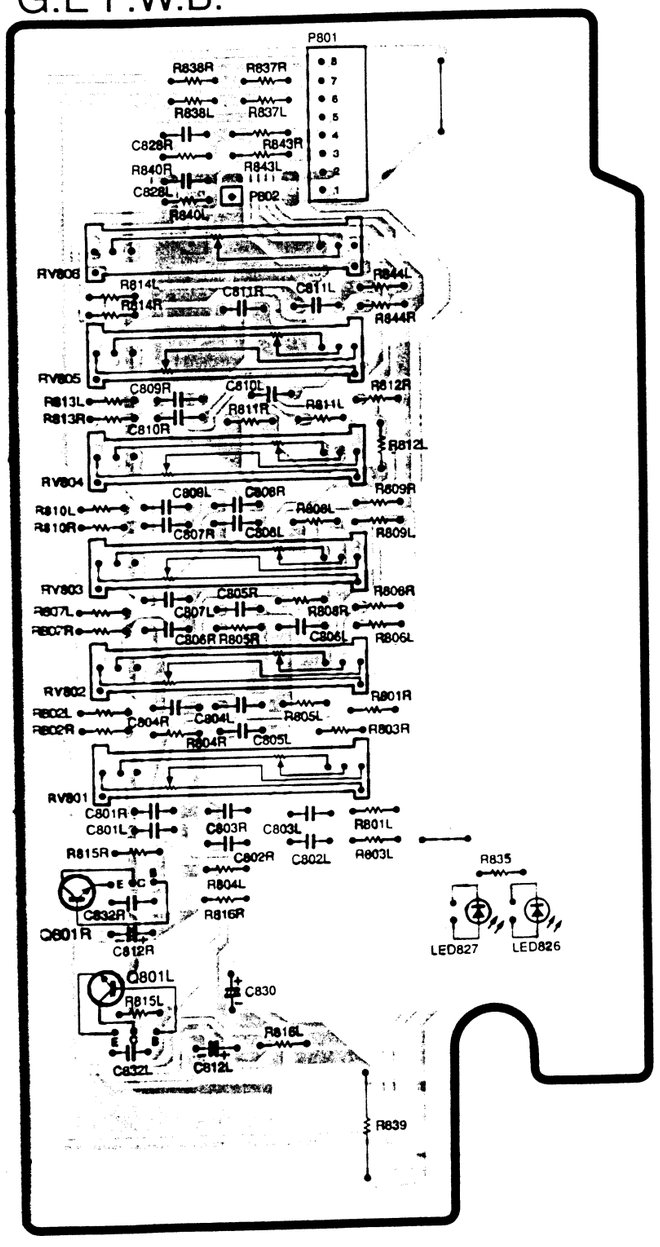
for W,W(UN),W(AU) P P.W.B.

PRINTED WIRING BOARD • PLAN DE BASE

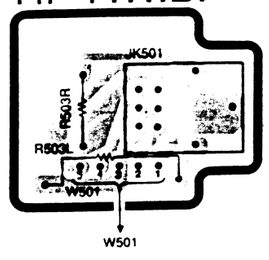
M P.W.B.



G.E P.W.B.

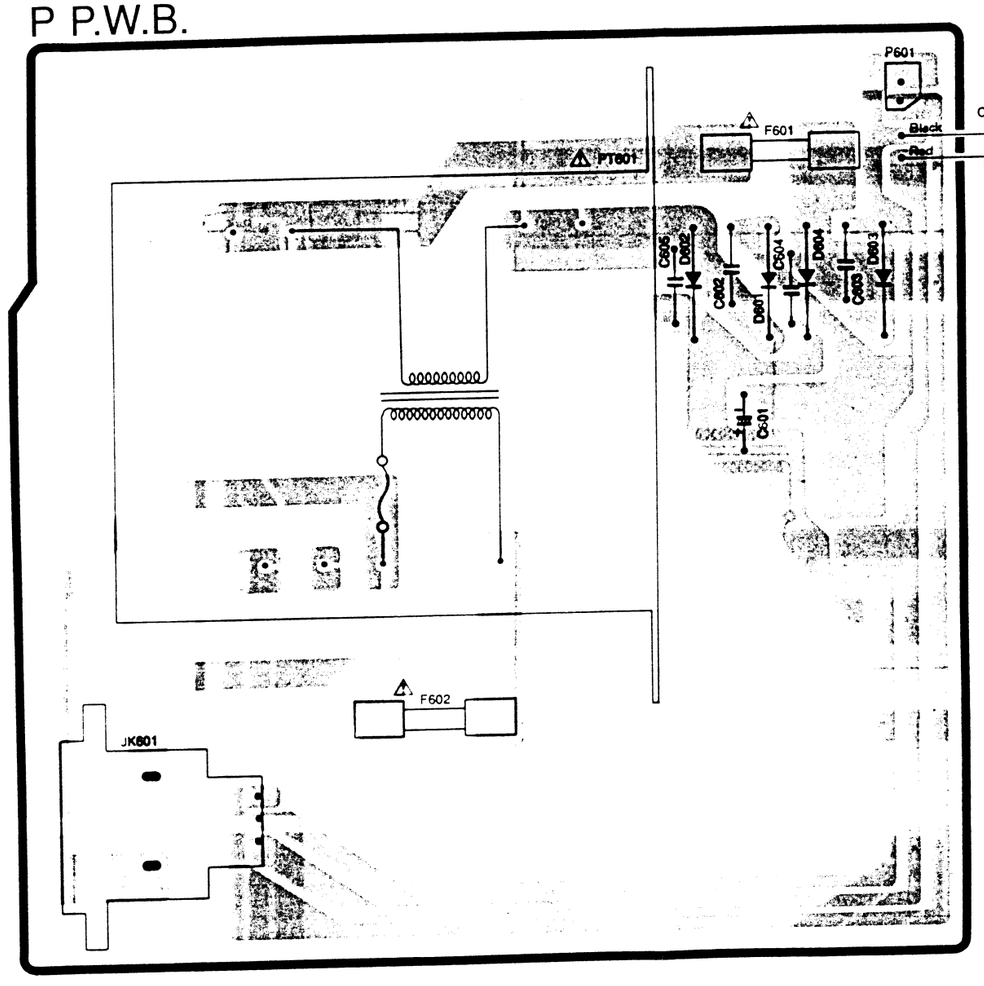


HP P.W.B.



for H,HC

P P.W.B.



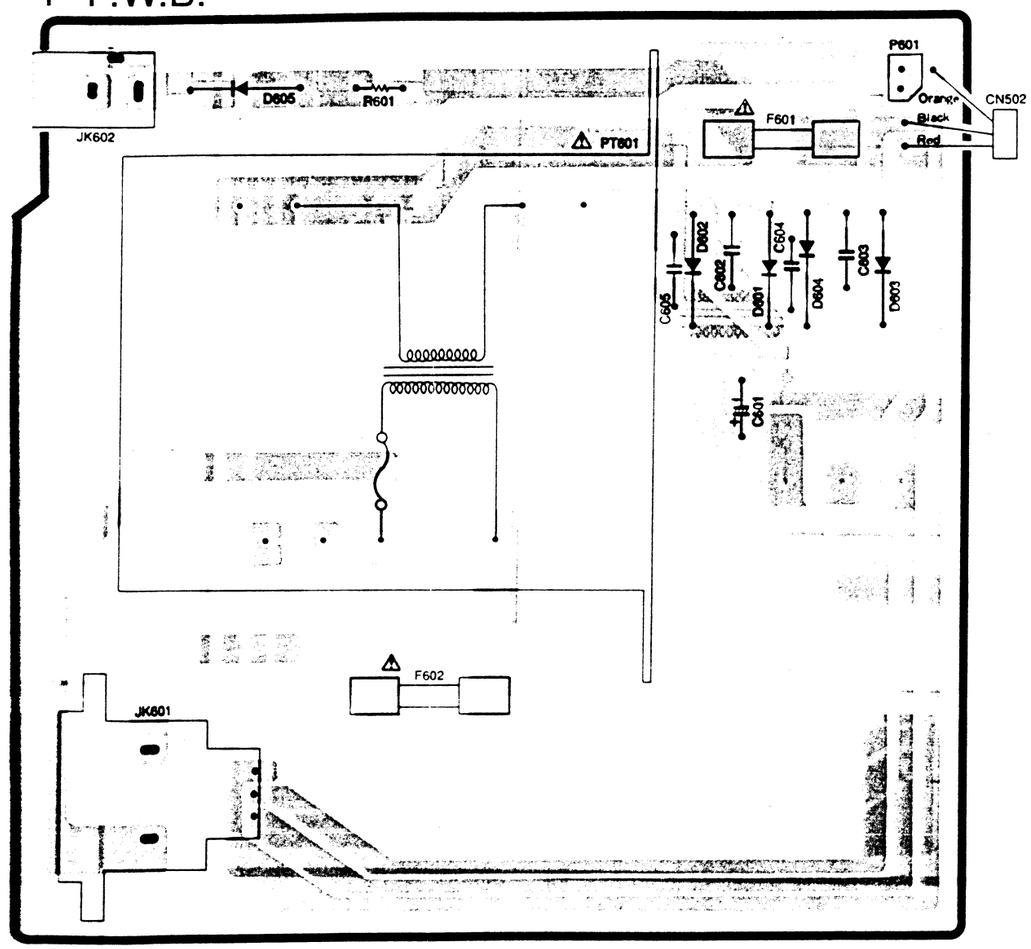
Q801R Q801L

1 2 3 4 5

A B C

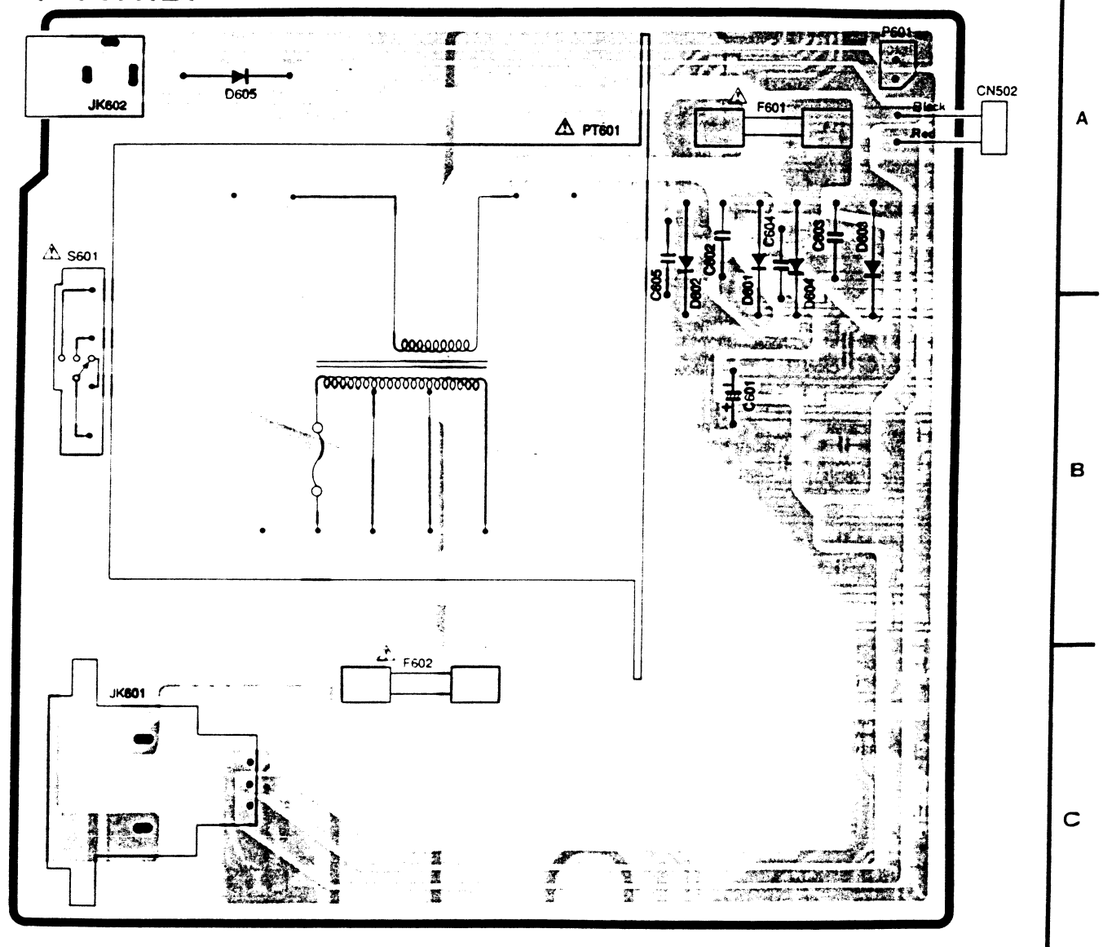
for E.E(BS)

P P.W.B.

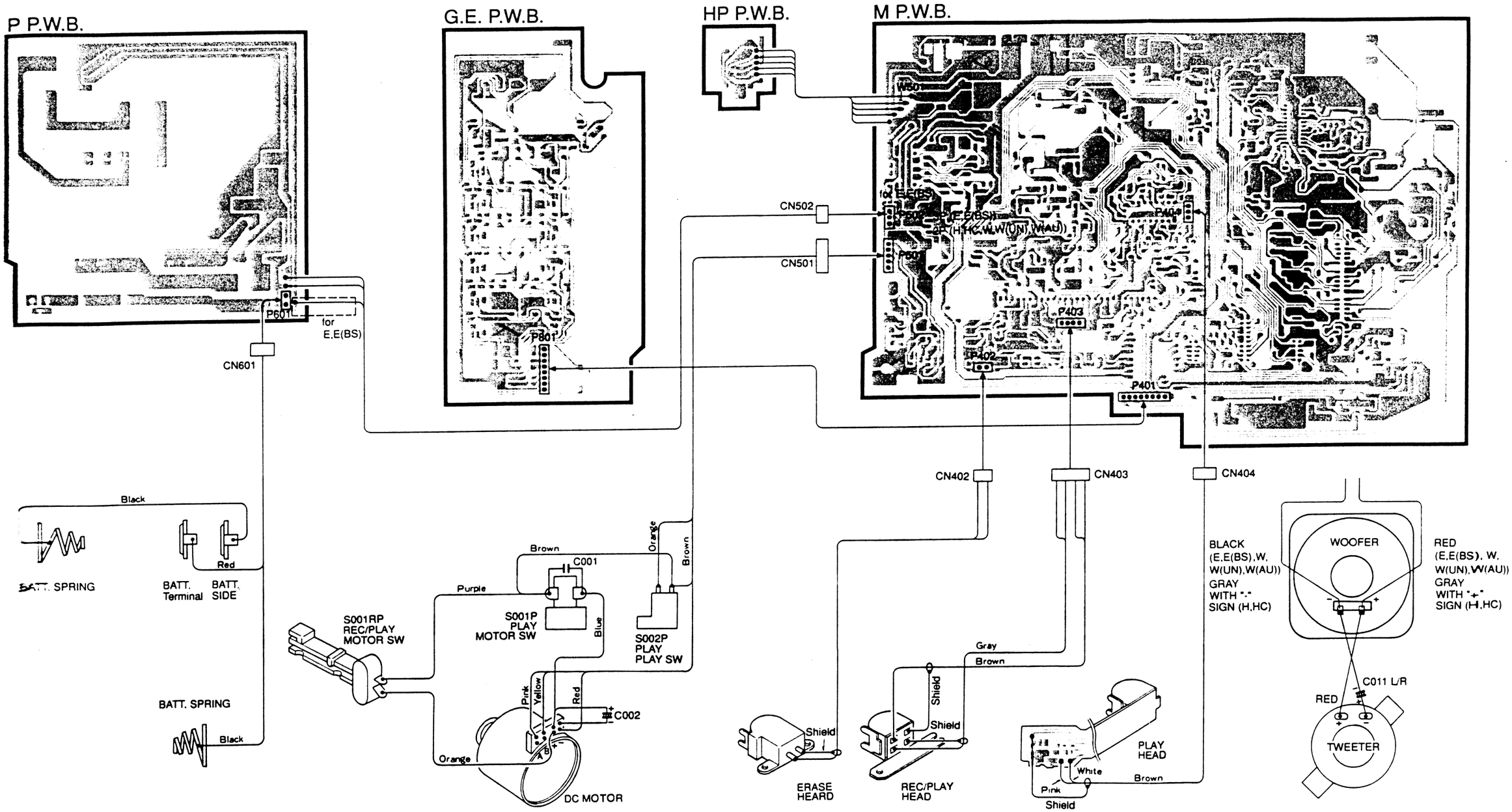


for W,W(UN),W(AU)

P P.W.B.



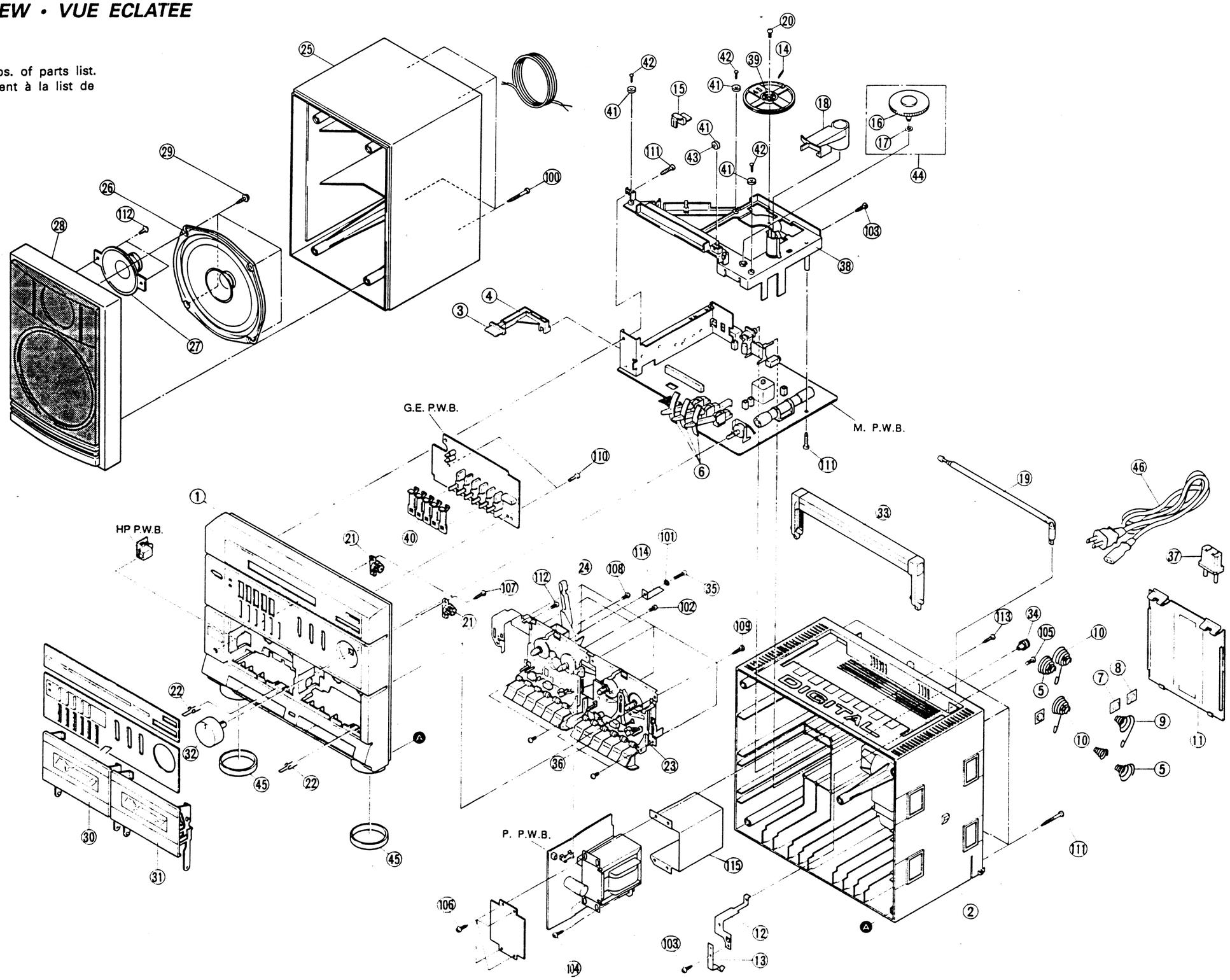
WIRING DIAGRAM • SCHEMA DE CABLAGE



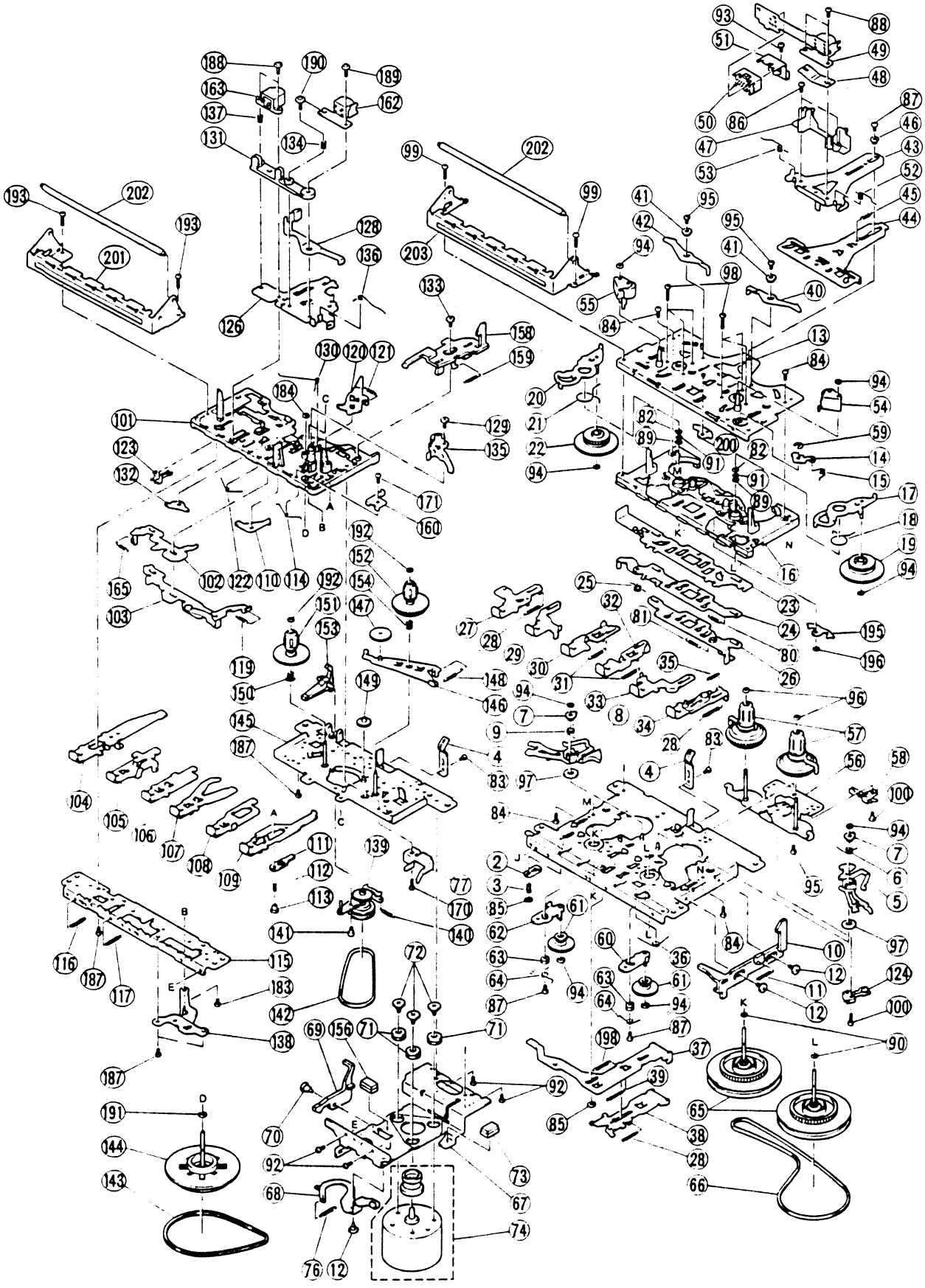
EXPLODED VIEW • VUE ECLATEE

- **Cabinet**
- **Cabine**

Nos. are reference Nos. of parts list.
Les numéros se référent à la list de pièces



- **Cassette Chassis** Nos. are reference Nos. of parts list.
- **Châssis de Cassette** Les numéros se réfèrent à la list de pièces



REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS:
Capacitors ..... CC: Cylindrical ceramic, CD: Ceramic discal, PF: Polyester film, EL: Electrolytic, PP: Polypropylene, ST: Styrol,
Resistors ..... CF: Carbon film, CC: Carbon composition, MF: Metal oxide film, VR: Variable resistor
Semiconductor ..... TR: Transistor, DI: Diode, ZD: Zener diode VA: Varistor, TH: Thermistor, IC: IC

SYMBOL NO.	PARTS NO.	DESCRIPTION
		CAPACITORS;
C001	0244171	CD 0.01µF +80 −20 % 50V
C002	0800009	EL 4.7µF 25V
C011L, R	0800015	EL 10µF 16V
C102	0230621	CD 24PF ±5% 50V
C104	0246448	CD 22PF ±5% 50V
C107	0246444	CD 15PF ±5% 50V
C150	0208684	CD 100PF ±5% 50V
C151	0890012	CD 18PF ±20% 50V [for E, E(BS)]
C151	0890004	CD 3.3PF ±10% 50V [except E, E(BS)]
C152	0890009	CD 12PF ±5% 50V [for E, E(BS)]
C152	0890008	CD 10PF ±5% 50V [except E, E(BS)]
C153	0890021	CD 82PF ±10% 50V [for E, E(BS)]
C153	0890008	CD 10PF ±5% 50V [except E, E(BS)]
C154	0890007	CD 8.2PF ±10% 50V [for E, E(BS)]
C154	0890012	CD 18PF ±20% 50V [except E, E(BS)]
C155	0890012	CD 18PF ±20% 50V [for E, E(BS)]
C155	0890011	CD 15PF ±5% 50V [except E, E(BS)]
C156	0890013	CD 22PF ±20% 50V [for E, E(BS)]
C156	0890011	CD 15PF ±5% 50V [except E, E(BS)]
C157	1221391	ST 180PF ±5% 50V [for E, E(BS)]
C157	0268321	PP 360PF ±5% 100V [except E, E(BS)]
C158	0268321	PP 360PF ±5% 100V [for E, E(BS)]
C158	0268442	PP 1500PF ±5% 100V [except E, E(BS)]
C159	0880009	PF 0.01µF ±10% 50V
C160	0890005	CD 4.7PF ±10% 50V
C162	0209731	CD 1000PF ±10% 50V [for E, E(BS)]
C164	0890043	CD 0.01µF ±20% 16V
C170	0208686	CD 120PF ±5% 50V [for E, E(BS)]
C202	0800003	EL 1µF 50V

SYMBOL NO.	PARTS NO.	DESCRIPTION
C203	0209731	CD 1000PF ±10% 50V
C209L, R	0209762	CD 0.15µF ±20% 25V
C210L, R	0800003	EL 1µF 50V
C211	0800022	EL 22µF 10V
C212	0890011	CD 15PF ±5% 50V
C213	0890044	CD 0.022µF +80 −20 % 25V
C215	0890044	CD 0.022µF +80 −20 % 25V
C216	0890022	CD 100PF ±10% 50V
C217	0880014	PF 0.047µF ±10% 50V
C224	0240216	CD 0.022µF ±10% 25V
C226	0890005	CD 4.7PF ±10% 50V
C251	0890022	CD 100PF ±10% 50V
C252	0240224	CD 0.1µF ±10% 25V
C253	0800007	EL 3.3µF 50V
C254	0800003	EL 1µF 50V
C255	0800001	EL 0.47µF 50V
C256	0230648	CD 4.7PF ±10% 50V
C257	0248684	CD 100PF ±5% 50V
C258	0880003	PF 1000PF ±10% 50V
C401	0800056	EL 220µF 6.3V
C402L, R	0800039	EL 47µF 10V
C403L, R	0890034	CD 820PF ±10% 50V
C404L, R	0890034	CD 820PF ±10% 50V
C405L, R	0890043	CD 0.01µF ±20% 16V
C406	0800048	EL 100µF 10V
C407L, R	0800007	EL 3.3µF 50V
C410	0800049	EL 100µF 16V
C411	0268435	PF 0.015µF ±5% 100V
C412	0800007	EL 3.3µF 50V
C413	0800074	EL 470µF 16V
C419L, R	0800015	EL 10µF 16V
C420L, R	0890035	CD 1000PF ±10% 50V
C421L, R	0800003	EL 1µF 50V
C422L, R	0800003	EL 1µF 50V
C426	0209175	CD 0.047µF +80 −20 % 50V
C427	0800001	EL 0.47µF 50V
C428	0890039	CD 4700PF ±30% 16V
C429L, R	0240215	CD 0.018µF ±10% 25V
C430L, R	0209737	CD 0.01µF ±10% 50V
C432L, R	0890026	CD 220PF ±10% 50V
C433L, R	02528032	EL 0.33µF 50V
C434	0890041	CD 6800PF ±30% 16V
C435	0890036	CD 1500PF ±20% 50V
C436	0209762	CD 0.15µF ±20% 25V
C437	0800048	EL 100µF 10V
C439	0800015	EL 10µF 16V
C440L, R	0208684	CD 100PF ±5% 50V
C441L, R	0800003	EL 1µF 50V
C444	0890044	CD 0.022µF +80 −20 % 25V

SYMBOL NO.	PARTS NO.	DESCRIPTION
C445L, R	0248688	CD 150PF ±5% 50V
C446L, R	0248688	CD 150PF ±5% 50V
C448	0800015	EL 10μF 16V
C501	0800083	EL 1000μF 25V
C502L, R	0800049	EL 100μF 16V
C503L, R	0800016	PF 0.1μF ±10% 50V
C504L, R	0800082	EL 1000μF 16V
C505L, R	0800047	EL 100μF 6.3V
C506	0800024	EL 22μF 25V
C507L, R	0890028	CD 330PF ±10% 50V
C508	0800051	EL 100μF 25V
C515	0800059	EL 220μF 25V
C516	0890044	CD 0.022μF +80 −20% 25V
C517	0800051	EL 100μF 25V
C518	0800009	EL 4.7μF 25V
C601	0252642	EL 2200μF 25V
C602	0244173	CD 0.022μF +80 −20% 50V
C603	0244173	CD 0.022μF +80 −20% 50V
C604	0244173	CD 0.022μF +80 −20% 50V
C605	0244173	CD 0.022μF +80 −20% 50V
C801L, R	0890041	CD 6800PF ±30% 16V
C802L, R	0209175	CD 0.047μF +80 −20% 50V
C803L, R	0890041	CD 6800PF ±30% 16V
C804L, R	0890044	CD 0.022μF +80 −20% 25V
C805L, R	0890039	CD 4700PF ±30% 16V
C806L, R	0890044	CD 0.022μF +80 −20% 25V
C807L, R	0890038	CD 3300PF ±20% 16V
C808L, R	0890043	CD 0.01μF ±20% 16V
C809L, R	0890036	CD 1500PF ±20% 16V
C810L, R	0890041	CD 6800PF ±30% 16V
C811L, R	0890026	CD 220PF ±10% 50V
C812L, R	0800015	EL 10μF 16V
C828L, R	0890039	CD 4700PF ±30% 16V
C830	0800048	EL 100μF 10V
C832L	0240067	CD 0.047μF +80 −20% 50V
C905	0800057	EL 220μF 10V
C910	0800009	EL 4.7μF 25V
C911	0800009	EL 4.7μF 25V
		RESISTORS;
R103	0700016	CF 15Ω ±5% 1/16W
R154	0700053	CF 8.2KΩ ±5% 1/16W [except E, E(BS)]
R155	0700056	CF 15KΩ ±5% 1/16W [for E, E(BS)]
R161	0700027	CF 100Ω ±5% 1/16W [for E, E(BS)]
R162	0700074	CF 330KΩ ±5% 1/16W [for E, E(BS)]
R213	0700031	CF 180Ω ±5% 1/16W
R214	0700056	CF 15KΩ ±5% 1/16W
R227L, R	0700067	CF 100KΩ ±5% 1/16W
R251	0700045	CF 2.2KΩ ±5% 1/16W
R252	0700041	CF 1KΩ ±5% 1/16W
R253	0700061	CF 33KΩ ±5% 1/16W
R254	0700061	CF 33KΩ ±5% 1/16W
R255	0700054	CF 10KΩ ±5% 1/16W
R401L, R	0700067	CF 100KΩ ±5% 1/16W
R402L, R	0700027	CF 100Ω ±5% 1/16W
R403L, R	0700074	CF 330KΩ ±5% 1/16W
R404L, R	0700055	CF 12KΩ ±5% 1/16W
R405L, R	0700057	CF 18KΩ ±5% 1/16W
R406	0700061	CF 33KΩ ±5% 1/16W

SYMBOL NO.	PARTS NO.	DESCRIPTION
R407	0700063	CF 47KΩ ±5% 1/16W
R408L, R	0700051	CF 5.6KΩ ±5% 1/16W
R409L, R	0700061	CF 33KΩ ±5% 1/16W
R410L, R	0700061	CF 33KΩ ±5% 1/16W
R411L, R	0700051	CF 5.6KΩ ±5% 1/16W
R412	0700032	CF 220Ω ±5% 1/16W
R413	0700049	CF 4.7KΩ ±5% 1/16W
R414L, R	0700059	CF 27KΩ ±5% 1/16W
R415L, R	0700067	CF 100KΩ ±5% 1/16W
R417	0700062	CF 39KΩ ±5% 1/16W
R418L, R	0700021	CF 33Ω ±5% 1/16W
R419	0700061	CF 33KΩ ±5% 1/16W
R420	0700054	CF 10KΩ ±5% 1/16W
R423L, R	0700052	CF 6.8KΩ ±5% 1/16W
R425	0700068	CF 120KΩ ±5% 1/16W
R426	0700058	CF 22KΩ ±5% 1/16W
R427	0700058	CF 22KΩ ±5% 1/16W
R428	0700058	CF 22KΩ ±5% 1/16W
R429	0700061	CF 33KΩ ±5% 1/16W
R430	0700061	CF 33KΩ ±5% 1/16W
R431	0700058	CF 22KΩ ±5% 1/16W
R432	0129563	CF 120Ω ±5% 1/4W
R439	0700058	CF 22KΩ ±5% 1/16W
R440	0700058	CF 22KΩ ±5% 1/16W
R441	0700058	CF 22KΩ ±5% 1/16W
R442	0700005	CF 2.2Ω ±5% 1/16W
R443	0700078	CF 680KΩ ±5% 1/16W
R444	0700046	CF 2.7KΩ ±5% 1/16W
R452L, R	0700052	CF 6.8KΩ ±5% 1/16W
R455L, R	0700072	CF 220KΩ ±5% 1/16W
R456L, R	0700028	CF 120Ω ±5% 1/16W
R457L, R	0700039	CF 820Ω ±5% 1/16W
R458L, R	0700045	CF 2.2KΩ ±5% 1/16W
R459L, R	0700047	CF 3.3KΩ ±5% 1/16W
R460	0700032	CF 220Ω ±5% 1/16W
R461L, R	0700079	CF 820KΩ ±5% 1/16W
R463	0700014	CF 10Ω ±5% 1/16W
R464	0700059	CF 27KΩ ±5% 1/16W
R465	0700067	CF 100KΩ ±5% 1/16W
R466	0700054	CF 10KΩ ±5% 1/16W
R467	0700027	CF 100Ω ±5% 1/16W
R468	0700027	CF 100Ω ±5% 1/16W
R469	0129569	CF 220Ω ±5% 1/4W
R470	1129573	CF 330Ω ±5% 1/4W
R472	0700058	CF 22KΩ ±5% 1/16W
R473	0700063	CF 47KΩ ±5% 1/16W
R474	0700054	CF 10KΩ ±5% 1/16W
R476	0700049	CF 4.7KΩ ±5% 1/16W
R477L, R	0700043	CF 1.5KΩ ±5% 1/16W
R478L, R	0700057	CF 18KΩ ±5% 1/16W
R481	0700041	CF 1KΩ ±5% 1/16W
R482L, R	0700041	CF 1KΩ ±5% 1/16W
R483	0700041	CF 1KΩ ±5% 1/16W
R484	0700054	CF 10KΩ ±5% 1/16W
R485L, R	0700063	CF 47KΩ ±5% 1/16W
R501L, R	0700005	CF 2.2Ω ±5% 1/16W
R502L, R	0700024	CF 56KΩ ±5% 1/16W
R503L, R	01132902	CF 180Ω ±5% 1/2W
R504L, R	0700041	CF 1KΩ ±5% 1/16W
R505	0700043	CF 1.5KΩ ±5% 1/16W
R506	0700049	CF 4.7KΩ ±5% 1/16W
R508	0700068	CF 120KΩ ±5% 1/16W
R511	0700038	CF 680Ω ±5% 1/16W
R512	0700038	CF 680Ω ±5% 1/16W

SYMBOL NO.	PARTS NO.	DESCRIPTION
R515	0700041	CF 1KΩ ±5% 1/16W
R516	0700041	CF 1KΩ ±5% 1/16W
R801L, R	0700055	CF 12KΩ ±5% 1/16W
R802L, R	0700055	CF 12KΩ ±5% 1/16W
R803L, R	0700075	CF 390KΩ ±5% 1/16W
R804L, R	0700059	CF 27KΩ ±5% 1/16W
R805L, R	0700049	CF 4.7KΩ ±5% 1/16W
R806L, R	0700054	CF 10KΩ ±5% 1/16W
R807L, R	0700054	CF 10KΩ ±5% 1/16W
R808L, R	0700053	CF 8.2KΩ ±5% 1/16W
R809L, R	0700053	CF 8.2KΩ ±5% 1/16W
R810L, R	0700053	CF 8.2KΩ ±5% 1/16W
R811L, R	0700051	CF 5.6KΩ ±5% 1/16W
R812L, R	0700051	CF 5.6KΩ ±5% 1/16W
R813L, R	0700051	CF 5.6KΩ ±5% 1/16W
R814L, R	0700053	CF 8.2KΩ ±5% 1/16W
R815L, R	0700079	CF 820KΩ ±5% 1/16W
R816L, R	0700049	CF 4.7KΩ ±5% 1/16W
R835	0700038	CF 680Ω ±5% 1/16W
R837L, R	0700048	CF 3.9KΩ ±5% 1/16W
R838L, R	0700044	CF 1.8KΩ ±5% 1/16W
R839	0700032	CF 220Ω ±5% 1/16W
R840L, R	0700056	CF 15KΩ ±5% 1/16W
R843L, R	0700037	CF 560Ω ±5% 1/16W
R902	0119412	MF 82KΩ ±10% 1W
R911	0700061	CF 33KΩ ±5% 1/16W
R912	0700061	CF 33KΩ ±5% 1/16W
R913	0700049	CF 4.7KΩ ±5% 1/16W
	ICS;	
IC201	2385323	IC TA8167N
IC401	23011912	IC TA7784P
IC501	23008722	IC μPC1335V
	TRANSISTORS;	
Q161	2319083	TR HIT9011GH [for E, E(BS)]
Q402L, R	2329453	TR 2SC945P
Q403L, R	2329453	TR 2SC945P
Q404	23280832	TR 2SA844E
Q407	2329453	TR 2SC945P
Q408	2329453	TR 2SC945P
Q409	2319091	TR HIT9014N (C)
Q410L, R	2329453	TR 2SC945P
Q412	2317782	TR 2SC2235 (Y)
Q413L, R	2329453	TR 2SC945P
Q414	2319052	TR HIT8050C
Q415	2329453	TR 2SC945P
Q501	2318433	TR 2SD2061 (F)
Q502	2318433	TR 2SD2061 (F)
Q503	23280832	TR 2SA844E
Q504	2329453	TR 2SC945P
Q801L, R	2329453	TR 2SC945P
	DIODES;	
D201	2398921	DI 1N4531T
D202	2398921	DI 1N4531T
D251	23380312	DI 1S2790
D401	2398921	DI 1N4531T
D402	2398921	DI 1N4531T
D403	2398921	DI 1N4531T
D409	2398921	DI 1N4531T

SYMBOL NO.	PARTS NO.	DESCRIPTION
D501	23375552	DI HZ11B-2
D502	23375692	DI HZ12C-3
D504	23375552	DI HZ11B-2
D601	2398823	DI RL253
D602	2398823	DI RL253
D603	2398823	DI RL253
D604	2398823	DI RL253
D902	23375172	DI HZ6C-1
D910	2398921	DI 1N4531T
D911	2398921	DI 1N4531T
D912	2398921	DI 1N4531T
D913	2398921	DI 1N4531T
LED826	2397311	LED TLR-208
LED827	2397311	LED TLR-208
	VARIABLE CAPACITOR;	
CV101	0282402	VARIABLE CAPACITOR
	VARIABLE RESISTORS;	
RT251	0189332	VR 10KΩ
RT501	0158923	VR 2KΩ
RV401	0166945	VR 50KΩ
RV403	0159941	VR 10KΩ
RV801	0189121	VR 100KΩ
RV802	0189121	VR 100KΩ
RV803	0189121	VR 100KΩ
RV804	0189121	VR 100KΩ
RV805	0189121	VR 100KΩ
RV806	0189122	VR 50KΩ
	TRANSFORMERS;	
T201	2154962	FM IF TRANSFORMER
T202	2137871	AM IF TRANSFORMER
T203	2154961	FM IF TRANSFORMER
T401	2136823	BIAS OSC COIL (85kHz)
	FUSES;	
⚠ F601	2727725	FUSE (4A, 250V)
⚠ F602	2728072	FUSE (630mA)
	COILS;	
L101	2138084	FM RF COIL
L102	2138081	FM OSC COIL
L151	2137662	SW ANT COIL [for E, E(BS)]
L151	2137667	ANTENNA COIL [except E, E(BS)]
L154	2137632	LW OSC COIL [for E, E(BS)]
L154	2137631	MW OSC COIL [except E, E(BS)]
L155	2137631	MW OSC COIL [for E, E(BS)]
L155	2137633	SW OSC COIL [except E, E(BS)]
L156	2137671	SW OSC COIL [for E, E(BS)]
L156	2137672	SW OSC COIL [except E, E(BS)]
L160	2137684	CHOKE COIL 0.45 MICRO H
L201	2227922	CHOKE COIL 22 MICRO H
L202	2227721	FM TRAP COIL
L401L, R	2227991	CHOKE COIL 3.3 MICRO H
L402L, R	2228611	CHOKE COIL 33 MICRO H

SYMBOL NO.	PARTS NO.	DESCRIPTION
		MISCELLANEOUS;
BPF201	2137193	FM BAND PASS FILTER
CF201	2155491	CERAMIC FILTER [for E, E(BS)]
CF201	2155492	CERAMIC FILTER [except E, E(BS)]
CF202	2135321	CERAMIC FILTER
CT152	0283113	CAPACITOR VARIABLE [for E, E(BS)]
CT152	0283557	TRIMMER
CT153	0282148	CAPACITOR SEMI VARIABLE [for E, E(BS)]
CT154	0282148	CAPACITOR SEMI VARIABLE
CT156	0283113	CAPACITOR VARIABLE
S201	2628551	SLIDE SWITCH
S401	2628001	SWITCH, LEVER
S402	2629296	SW-SL9-2
S403	2628486	LEVER SWITCH
S404	2628485	LEVER SWITCH
⚠ S501	2600153	POWER SWITCH
S601	2618472	SWITCH [for W, W(UN), W(AU)]
E601	2727832	FUSE HOLDER
JK401	2679371	3.5 JACK
JK402	2678152	2P PIN JACK
JK501	2678761	STEREO JACK
JK502	2689551	4P PUSH TERMINAL
⚠ JK601	26592742	2P SOCKET [for H, HC]
⚠ JK601	26592712	2P SOCKET [except H, HC]
⚠ JK602	2678881	DC JACK [for E, E(BS)]
⚠ JK602	2678882	DC JACK [for W, W(UN), W(AU)]
L152	2757993	FERRITE ANTENNA [forE, E(BS)]
L152	2757981	FERRITE ANTENNA [except E, E(BS)]
	8671408	DT BIND HEAD SCREW (3x8)
	3814881	LED SPACER
⚠ PT601	2249814	POWER TRANSFORMER (1.12KG 42.9VA) [for H, HC]
⚠ PT601	2249811	POWER TRANSFORMER (1.12KG 42.9VA) [for E]
⚠ PT601	2249812	POWER TRANSFORMER (1.12KG 42.9VA) [for E(BS)]
⚠ PT601	2249813	POWER TRANSFORMER (1.12KG 42.9VA) [for W, W(UN), W(AU)]
		CABINET CHASSIS
1	3238141	FRONT CASE SASS [for H, HC]
	3238142	FRONT CASE SASS [for E, E(BS)]
	3238143	FRONT CASE SASS [for W, W(UN), W(AU)]
2	3814711	REAR CASE SASS [for H]
	3814712	REAR CASE SASS [for HC]
	3814713	REAR CASE SASS [for E]
	3814714	REAR CASE SASS [for E(BS)]
	3814715	REAR CASE SASS [for W]
	3814716	REAR CASE SASS [for W(UN)]
	3814717	REAR CASE SASS [for W(AU)]
3	3309431	KNOB P
4	3809771	P ARM
5	3367142	SPRING
6	3309421	SNAP KNOB
7	4436664	TERMINAL

SYMBOL NO.	PARTS NO.	DESCRIPTION
8	4436663	TERMINAL
9	3367065	SPRING
10	3367064	SPRING
11	3950093	BATTERY COVER
12	4480741	ANT TERMINAL
13	4480771	ANT SPRING
14	3340322	SPRING M
15	3975431	POINTER
16	3295294	TUN KNOB
17	3340312	SPRING WASHER
18	3309391	BAND KNOB
19	2757901	ROD ANTENNA
20	0711306	SCREW, PAN HAND 2.6x6
21	3950381	DAMPER ASSY
22	3368685	EJECT SPRING
23	2589541	TN-521Z MECHA
24	4480761	REC LEVER
25	3809781	SPEAKER BOX
26	2404142	SPEAKER 16
27	2404232	TWEETER 5
28	3238152	BUFFLE PANEL TAS
29	4578972	BT FLANGE SCREW, (3x10)
30	3810844	CASSETTE DOOR L SASS
31	3810843	CASSETTE DOOR R SASS
32	3309411	VOL. KNOB
33	4006751	HANDLE ASSY
34	3800862	KNOB
35	8741104	2x4 B.H. SCREW
36	3309451	CASSETTE BUTTON
37	26679222	SIEMEN PLUG [for W, W(UN)]
38	4006761	DIAL HOLDER SUB ASSY
39	3975391	PULLEY
40	3814541	GE PIECE
41	3934271	ROLLER
42	4577661	ROLLER PIN
43	4583855	RIBET (2X7)
44	4006771	TUNING KNOB TAS
45	3812852	INSULATOR RING
⚠ 46	2706591	AC POWER CORD [for H]
⚠	2713141	AC POWER CORD [for H(C)]
⚠	2705942	AC POWER CORD [for E]
⚠	2717901	AC POWER CORD [for E(BS)]
⚠	2706242	AC POWER CORD [for W, W(UN)]
⚠	2713261	AC POWER CORD [for W(AU)]
100	4577817	3x30 BT SCREW (SP. BOX x 4)
101	8815111	LOCK WASHER
102	48190682	M2x4 SCREW (COUNTER BRACKET x 1)
103	8691410	3x10 BT SCREW (ANT SPRING 1)
104	4583881	3x12 BT SCREW (3x12)
105	8744412	3x12 BIND HEAD SCREW (ANT. 1)
106	4578976	3x20 BT SCREW (TRANSFORMER 4)
107	8691412	3x12 BT SCREW (DAMPER 2)
108	4833465	SCREW (A) (REC. LEVER 1)
109	8699412	3x12 BT SCREW B (MECHA 6)
110	8699410	3x10 BT SCREW B (PWB 2)
111	4577816	3x20 BT SCREW (REAR CASE 5) (HEAT SINK 1, DIAL HOLDER 1)
112	8691408	3x8 BT SCREW (COUNTER BRACKET 1)
113	8699408	3x8 BT SCREW B (LINE IN 1)
114	4481572	RECORD PLATE
115	4477482	SHIELD PLATE

SYMBOL NO.	PARTS NO.	DESCRIPTION
		CASSETTE CHASSIS
2	48191312	PAUSE LEVER
3	48191322	PAUSE LEVER SPRING
4	4842395	PACK SPRING PLATE
5	4853652	AUTO LEVER (F)
6	4853653	AUTO LEVER (F) SPRING
7	4853654	SPRING STOPPER
8	4853655	AUTO LEVER (R)
9	4853656	AUTO LEVER (R) SPRING
10	4856321	EJECT SLIDE LEVER (1851-17-03)
11	4853658	EJECT SLIDE LEVER SPRING
12	4833465	SPECIAL SCREW
13	4853659	SUB CHASSIS ASSY
14	4853650	TURN OVER ARM
15	4853661	TURN OVER SPRING
16	4853662	BUTTON BASE ASSY
17	4853663	T GEAR ARM (F) ASSY
18	4853664	T GEAR ARM (F) SPRING
19	4853665	T-CAM GEAR (F)
20	4853666	T GEAR ARM (R) ASSY
21	4853667	T GEAR ARM (R) SPRING
22	4853668	T-CAM GEAR (R)
23	4853669	SLIDE PLATE
24	4853660	LOCK ACTUATOR ASSY
25	4853671	LOCK RELEASE SPRING
26	4853672	SW ACTUATOR ASSY
27	4856322	MODE BUTTON ASSY
28	4853674	BUTTON LEVER SPRING
29	4853675	PLAY BUTTON LEVER
30	4853676	FF BUTTON LEVER R (S)
31	4853677	FF BUTTON LEVER SPRING
32	4853678	FF BUTTON LEVER F (S)
33	4853679	STOP BUTTON LEVER (S)
34	4853670	PROGRAM BUTTON LEVER (S)
35	4853681	PULL ARM SPRING
36	4853682	STOP BUTTON LEVER SPRING
37	4853683	RELAY PLATE
38	4853684	FF SW PLATE
39	4853685	R.C. SPRING
40	4853686	AUTO CONTROL ARM (F)
41	4853687	CONTROL COLLAR
42	4853688	AUTO CONTROL ARM (R)
43	4853689	HEAD PANEL
44	4853680	R.C. PLATE
45	4853691	R.C. PLATE SPRING
46	4853692	H.P. COLLAR
47	4853693	TAPE GUIDE
48	4853694	HEAD SPRING PLATE
49	8513372	P. HEAD P-5244BA-5487
50	4842401	SLIDE SWITCH
51	4853696	SWITCH BRACKET
52	4853697	PINCH ROLLER SPRING (F)
53	4853698	PINCH ROLLER SPRING (R)
54	4853699	PINCH ROLLER (F) ASSY
55	4853690	PINCH ROLLER (R) ASSY
56	4853701	REEL PLATE ASSY
57	4853702	REEL ASSY
58	8501741	LEAF SWITCH MSW-1290CV
59	48191962	E RING
60	4853704	FF GEAR ARM (F) ASSY
61	4853705	FF GEAR
62	4853706	FF GEAR ARM (R) ASSY
63	4853707	FF GEAR ARM COLLAR
64	4853708	FF GEAR ARM SPRING (F)
65	4853709	FLYWHEEL ASSY
66	4853700	MAIN BELT
67	4853711	MOTOR BRACKET
68	4853712	P KICK LEVER
69	4833463	LEVER
70	4833466	SPECIAL SCREW
71	4842404	MOTOR RUBBER
72	8511951	M. COLLER SCREW
73	4856324	FELT (1821-12-109)
74	8513377	MOTOR PASS
76	4853715	P KICK LEVER SPRING
77	4842425	PAUSE PROTECT BRACKET
80	4853716	LOCK ACTUATOR SPRING
81	4853717	SW ACTUATOR SPRING
82	8501744	P WASHER 1.75x4x0.3
83	4853719	C TAPPING SCREW, (2x3)
84	48191912	TAPPING SCREW, (2x6)
85	4842443	WASHER (2.1)
86	4853710	TAMS SCREW, (2x6)
87	4853721	CAMERA S TAPPING SCREW, (1.7x4)
88	4853722	SCREW, (2x4.5)
89	4842414	WASHER (2)
90	4842430	WASHER (2.1)
91	4853723	WASHER (1.45)
92	48190682	TAPPING SCREW, (2x4)
93	4842412	CAMERA S TAPPING SCREW, (1.7x2.5)
94	4842444	WASHER (1.2)
95	4853724	CAMERA S TAPPING SCREW, (1.7X3)
96	48190772	WASHER (1.2)
97	4853725	WASHER (3)
98	4853726	CAMERA S TAPPING SCREW, (1.7x8)
99	4856328	M2x9 SCREW (9999-13-02)
100	4856329	M2x5 SCREW (9181-00-00)
101	48189912	MAIN BASE ASSY
102	4853727	SWITCH ACTUATOR
103	4839371	PUSH BUTTON ACTUATOR ASSY
104	4823651	REC BUTTON LEVER
105	4823661	PLAY BUTTON LEVER
106	4823671	RWD BUTTON LEVER
107	4823681	FF BUTTON LEVER
108	4823691	STOP BUTTON LEVER
109	4823701	PAUSE BUTTON LEVER ASSY
110	48189902	RWD LEVER
111	48191312	PAUSE LEVER
112	48191322	PAUSE LEVER SPRING
113	48191332	PAUSE STOPPER
114	48191002	BUTTON LEVER SPRING
115	48202152	SUB CHASSIS
116	48190072	BUTTON LEVER SPRING
117	48202172	PLAY BUTTON LEVER SPRING
119	48190082	ACTUATOR SPRING
120	48190092	AUTO LEVER
121	48190002	AUTO LEVER SPRING
122	48202142	BUTTON LEVER SPRING
123	4856331	LEAF SWITCH MSW-1541T
124	8501749	LEAF SWITCH MSW-1275
126	4856332	HEAD PANEL (1829-03-04)
128	4842423	SENSING PLATE ASSY
129	4832522	SCREW

SYMBOL NO.	PARTS NO.	DESCRIPTION
130	48202212	HEAD PANEL SPRING
131	48190142	HEAD BASE
132	48190062	PR STOPPER
133	48190452	SCREW
134	48190172	SPRING
135	4839372	PINCH ROLLER ARM ASSY
136	4842424	PINCH ROLLER SPRING
137	4856333	E.H. SPRING (1821-03-08)
138	4831610	METAL GUIDE
139	4853728	RF PULLEY ARM ASSY
140	48202252	RF PULLEY ARM SPRING
141	48202262	RF ARM COLLAR SCREW
142	8513379	RF BELT
143	4853718	MAIN BELT
144	4850092	FLYWHEEL ASSY
145	4839376	REEL BASE ASSY
146	8513370	T GEAR PLATE ASSY
147	4839378	TAKE UP ROLLER GEAR
148	48190202	TG PLATE SPRING
149	4839379	FF GEAR
150	8513381	BACK TENSION SPRING
151	4842431	S REEL ASSY
152	4839381	TAKE UP REEL ASSY
153	4832421	RECORD SAFETY LEVER
154	4839382	BACK TENSION SPRING
156	4856324	FELT (1821-12-109)
158	48195352	EJECT SLIDE LEVER
159	48190442	EJECT SLIDE LEVER SPRING
160	4842433	BRACKET
162	8513383	HEAD MS15R-AA2N1
163	8513384	E HEAD LE15B-C1
165	48202182	SWITCH ACTUATOR SPRING
170	48191912	TAPPING SCREW, (2x6)
171	4842434	CAMERA TAPPING SCREW, (2x3.5)
184	48190782	WASHER (1.55)
187	48196072	BIND TAPPING SCREW, (2x5)
188	48195442	CAP SCREW (2x8)
189	48190602	SCREW, (2X7)
190	48196002	AZIMUTH SCREW
191	4832431	TAPPING BIND SCREW, (2x4)
192	4853731	WASHER (1.2)
193	48190722	SCREW, (2x7)
195	4853734	FF CONTROL ARM
196	8501740	P WASHER
198	4853732	BUTTON LEVER SPRING (P)
200	4853733	RC ARM
201	4831624	BUTTON FLAME (S) (1821-31-06)
202	8506761	BUTTON LEVER SHAFT
203	4856326	BUTTON FLAME (S) (1851-31-01)